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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Stories of the Week

Herman Goldberg's youngest child had trouble with an arithmetic assignment. Doughty Herman obliged by solving the problems.

Next evening at dinner he asked how the teacher had marked the homework.

"Three problems were wrong, Daddy, but don't you worry. Teacher told us those problems really were too hard for fourth grade."

From a collegiate magazine, The *Auburn Plainsman,* we quote a cutie.

Physics Prof.: "If you were at the top of a tall building how would you measure its height, using a barometer?"

Student: "I would tie a rope to the barometer, lower it to the ground and then measure the rope."

Physics Prof.: "Hmmm."

Dale Mericle reports that in New Orleans an outdoor display sign on a bar-and-grill lifts tourists eyebrows. It proclaims:

"Hell's Here. Air Conditioned."

Father and Suitor were waiting for Mary to descend the stairs.

"Yes, sir," father encouraged the romance. "Fella who weds Mary will get a prize."

"Er," he[illegible] Suitor, "could I see it?"

Elevation of Winfield C. Cook to Top Banana may change an old housewifely practice of ignoring specialty salesmen.

Mr. Cook, new president of the National Association of Direct Selling Companies, made his first front-door pitch in 1932. Since then he has accumulated an $150,000 New York estate, a yacht, and an expensive family.

Perhaps, then, a careful Mother shouldn't resent a specialty salesman's toe wedged in her door.

Instead, she will introduce and induce her marriageable daughters to come down from upstairs.

(Concluded on Page 10, Col. 1)

Will Future Refrigerated Display Cases Be of Open Shelf, Air Blanket Type?

DETROIT—Is there a revolution at hand in the design of refrigerated display cases for retail food stores—possibly in the form of "open shelves cooled by a blanket of refrigerated air?"

Well, practically nothing is impossible, in this age of scientific miracles, but there are many ideas which are possible but maybe somewhat impractical. Engineers for commercial refrigerator manufacturers admittedly have been working for some time on multi-tiered, "open shelf" display refrigerator equipment—but don't expect to find it in your grocery store next week.

Most of the commotion about this "revolution in refrigerated food display equipment" was stirred up by two publications outside the refrigeration industry. One, a leading general business publication, had a story stating that a leading manufacturer of such equipment "has developed a refrigerated open shelf for fresh meats, vegetables, and dairy products, and is testing it in selected stores across the country.

"The refrigerated shelf is entirely open in front. The cooling apparatus is designed to 'blanket the items on the shelf in a cold area,' according to a spokesman. This has worked successfully in laboratory tests, but the pilot run will give the cold area blanket further tests to make sure it holds up under all types of air currents that may be present in different stores."

Said a top official of the company named, in answer to an in-

(Concluded on Page 4, Col. 1)

Commercial Case Sales Continue Upward Climb

CHICAGO—Sales of commercial refrigerators are sailing right along with the rest of the boom.

Reports by member manufacturers to the Commercial Refrigerator Manufacturers Association, who do the big majority of business in that field, reveal sales for the first five months of 1955 running approximately 24% ahead of the same period in 1954, according to Paul L. Sullivan, executive secretary of CRMA.

Frigidaire Ups Switzer In Sales Reorganization

DAYTON—Three promotions and a general reorganization of the sales department were announced recently by Frigidaire Div. of General Motors Corp.

W. F. Switzer

Two new assistant general sales manager positions have been created in order to concentrate greater attention on field sales operations, according to H. F. Lehman, general sales manager.

H. J. Miller, formerly appliance sales manager, has been appointed assistant general sales manager responsible for sales in the western half of the country.

H. T. Mattern, formerly man-

(Concluded on Page 4, Col. 5)

From 'Bust to Boom' Tecumseh Story Told In July Issue of 'Fortune' Magazine

NEW YORK CITY—*Fortune* magazine, in its July issue, tells an absorbing story of Tecumseh Products Co.—how the firm developed from a "busted little company" into "the production giant" in the refrigeration compressor business.

The article doesn't disclose too many facts not previously known in the industry. However, it makes interesting reading as an outsider's view of the business.

Author William B. Harris points out in "Little, Big-Rich Tecumseh," that the company makes only one product—refrigeration compressors—and that one "in huge quantity."

In 1954, the article notes, this company provided around 48% of the compressors in the 5,630,000 household refrigerators, home freezers, and room air conditioners sold by all manufacturers.

Breaking this down by products, the report reveals that Tecumseh last year produced 31% of all household refrigerator compressors, 67% of those used in home freezers, and 80% of room air conditioner compressors.

Discussing the key to Tecumseh's success, the article says the company makes such effective use of its equipment "that it is the industry's lowest-cost producer, regularly passing back savings to its customers in the form of price reductions."

By this policy, the firm "has made competition rough," the magazine says. "It is a wonder that any competitors have survived, but competition for the company actually appears to be rising.

"Competition has consisted chiefly of Copeland Refrigeration Corp., which produced

(Concluded on Page 35, Col. 3)

Mfrs. Disagree On Appliance Price Advances

NEW YORK CITY — Boosts in steel prices have not yet brought about any moves to increase prices of refrigeration and air conditioning equipment, and major appliances, and there continue to be varying views on whether such price increases are probable.

A representative of a major manufacturer of air conditioning and refrigeration equipment says that "the competitive picture probably will not allow increases now."

But James H. Carmine, president of Philco, in a letter to distributors and company field sales personnel, states that "higher costs of raw materials, plus higher wages, are contributing to another round of higher production costs.

"It will be impossible for manufacturers of finished goods to absorb these increased costs," the Philco executive's communication continued. "This applies especially to refrigerators and air conditioners which are

(Concluded on Page 4, Col. 4)

Rishel Succeeds Hinchliff In Amana Post

AMANA, Iowa—E. L. Hinchliff, general sales manager of Amana Refrigeration, Inc., for the past 11 years and a veteran of 33 years in the appliance business, will relinquish this post as of July 31 to become Amana's special merchandising consultant, it has been announced by George C. Foerstner, executive vice president.

Succeeding Hinchliff as general sales manager will be J. A. Rishel, Jr., who has been with Amana since May of this year as a special representative.

He was formerly general sales manager of Deepfreeze Appliance Div., Motor Products Corp., and for five years Appliance Div. sales manager, Youngstown Kitchens. Prior to that he was director of sales at Parsons Co. in Detroit.

Hinchliff joined the company in 1944 to assist Amana in set-

(Concluded on Back Page, Col. 4)

Auto Cooling Sales Up for First Half

Installations Running Far Ahead of 1954, Car Mfrs. Indicate

DETROIT — In whatever terms they chose to express it, automobile manufacturers agreed that the demand for automobile air conditioning has grown by leaps and bounds this year.

Buick Motor Div. of General Motors Corp. reported to the NEWS that it had installed at the factory 23,782 automotive air conditioners in the first six months of this year. This compared with only 7,253 in the full year 1954.

From Oldsmobile Div., it was learned that air conditioners were put on 14,050 cars during the first half of this year as against approximately 6,000 in the same period last year. Air conditioned vehicles equalled 4.3% of production this year and only 2.6% last year.

Ford Motor Co. said that it had delivered 6,000 air conditioners to Ford dealers between March, when it first brought out its own unit, and June 30. The company presumed that they all had been installed.

Pontiac Div. of General Motors found its sales of air

(Concluded on Page 33, Col. 2)

Hot Spell May Deplete Stocks Of Room Units

DETROIT—With most weather forecasts (including the one published in the NEWS) predicting another hot spell through the middle of July, there seemed to be a good chance that 1955 stocks of room air conditioners will be well depleted by the end of summer.

Most manufacturers complete their production of current year models by July 1, so there will be little, if any, further production of 1955 models this year. Some manufacturers reported their stocks exhausted on

(Concluded on Page 33, Col. 1)

BEHIND PAGE ONE . . .

Du Pont Equips Some 'Freon' Salesmen's Cars with Conditioners

WILMINGTON, Del. — Practicing what it preaches, the du Pont Co. is equipping some of its "Freon" refrigerant salesmen's automobiles with air conditioning to gain first-hand information on such units.

Six cars will be fitted for the tests this summer, with two cooling units to be supplied by each of three manufacturers—Novi Equipment Co., Atlanta; Frigikar Corp., Dallas; and A.R.A. Mfg. Co., Fort Worth.

Standard models of air conditioners were chosen for testing under driving conditions.

Du Pont salesmen who are participating in this full-scale experiment in their company cars are W. H. Zillessen, Jr., Atlanta; T. J. Amann, Memphis; A. E. Fulford, Jacksonville, Fla.; P. M. Dahlen, West Pomono, Calif.; J. K. Worthington, Overland Park, Kan.; and D. D. Merrill, Bellaire, Texas.

Nensel Heads Servel's New Sales Service Dept.

EVANSVILLE, Ind. — Emil P. Nensel has been appointed manager of the new sales service department at Servel, Inc., according to Richard S. Testut, vice president and general manager of the home appliance sales division.

Chief function of the new department will be to supervise and coordinate non-technical services to customers.

UsAireo Names Outlet

LUBBOCK, Texas — Comfort Heating & Air Conditioning here has been appointed a distributor by the United States Air Conditioning Corp. for the south plains trading area. It is headed by Grady Lee Campbell and Joe E. Scott.

2 Calif. Wholesalers Merge, To Have Outlets In 8 Major Cities

SAN FRANCISCO—Purchase of the assets and name of California Refrigerator Co. by Refrigerating & Power Specialties Co. here was announced recently by A. F. Tudury, president of Rapsco. Both firms are refrigeration and air conditioning parts and supplies wholesalers.

The purchase, which involved several hundred thousand dollars, is expected to increase sales of the merged operations in northern California by more than $1 million per year. The combined operation has outlets in eight west coast cities.

Tudury stated that the entire California Refrigerator Co. organization would be integrated with that of Rapsco and present store managers would retain their positions.

Founded in 1926 by Tudury, Refrigerating & Power Specialties also conducts a large business in steam, power plant, and heating engineering equipment.

G. S. Robinson, former owner of California Refrigerating Co., is reestablishing himself in the logging and plywood business.

Air Conditioners Lead Sales Picture In Chattanooga Territory

CHATTANOOGA, Tenn.—According to official figures compiled by the Electric Power Board of Chattanooga, air conditioning units led all other appliances in sales volume here in May, capturing first place from television receivers, which had held the No. 1 spot for months.

A board spokesman said a total of 739 of the cooling units with a retail value of $222,402.50 were purchased in the area during May.

Electric appliance sales in May totaled $1,276,458.26, of which $1,107,243.28 was in domestic and $169,214.98 in commercial equipment. In May of 1954 sales were $1,217,919.88, including $1,043,677.94 in domestic and $174,241.94 in commercial equipment.

"The figures represent the sales by all dealers in the service area of the EPB, which itself does not sell appliances."

The following table gives figures on sales of the household appliances for May, 1955:

	Units	Value
Air conditioning units	730	$222,402.05
Refrigerators	587	161,747.85
Home Freezers	136	65,273.20
Water heaters	359	44,752.94
Conventional clothes washers	151	21,124.90
Automatic clothes washers	398	111,340.50
Clothes dryers	90	20,995.20
Portable fans	105	2,094.75
Attic and window fans	216	17,906.40
Ranges	464	111,949.28
Television receivers	689	162,714.24
Space heaters	793	67,405.00

New Dallas Bldg. Will Have Cooled Fruit Storage Room

DALLAS — Arrow Spice & Food Co.'s new building now under construction in the Inwood Industrial District will have a refrigeration room with more than 3,000 sq. ft. to store dried fruit for prompt processing.

For more information about products advertised on this page use Information Center, page 26.

Commercial Case of the Future--

(Concluded from Page 1, Col. 3)

quiry from the NEWS:

"If we've got models of such equipment as the type described on test, I've never seen them."

The other story, published in a periodical reaching the food field, stated that "the first major improvement in frozen food cabinets in almost 20 years may be close to realization."

The article further stated that multi-shelf or "gondola" type merchandising fixtures for frozen foods might soon make their debut.

Said one veteran executive of a commercial refrigerator manufacturing firm when queried as to the possibilities of an open-shelf, gondola type freezer fixture:

"Sure, it would be wonderful. Now you come on down and tell us how to design and make it. We're good, but we're not miracle men."

Some of the commotion about new cabinet design stems from agitation among frozen food distributors and wholesalers to increase frozen food display capacity in retail food stores.

As reported in the July 4 issue of the NEWS, a special committee of the National Association of Frozen Food Packers was formed to "assume the task of designing the cabinet of tomorrow." This presumably would be a fixture that would provide increased capacity for frozen food display without increasing the amount of floor space occupied.

Commented one manufacturer of cabinets:

"There's plenty of good frozen food display equipment available now, and the retail food merchant has demonstrated that he will buy it when he's convinced that he can fill it with frozen foods that he can move at the right kind of a profit.

"What the frozen food people are trying to do is to get enough space in every store to handle all the different varieties and brands of frozen foods and frozen specialties and novelties there are on the market—and that's going to be some task."

Air Conditioned Motel

NEW ORLEANS — construction work is scheduled to begin early in August on a new air conditioned motel of 34 to 40 units.

Known as the Civic Center motel, it is expected to be completed by the end of this year.

Price Increases--

(Concluded from Page 1, Col. 4)

heavily weighted with steel and copper, which is in extremely short supply. The values offered today may never be duplicated. As soon as the materials and components bought at today's prices are fabricated, their higher costs will inevitably be reflected in higher product prices."

This viewpoint contrasts with that of Judson Sayre, Norge president, who believes that such increased costs must be absorbed (see story, page 5).

A spokesman for Westinghouse Electric Corp. has been quoted as saying that his company would probably have to increase prices of its appliances, but that it would not act until it has worked off present steel inventories.

H. T. Mattern

H. J. Miller

Frigidaire Shifts--

(Concluded from Page 1, Col. 3)

ager of branch and distributor operations, has been named assistant general sales manager in charge of the eastern half.

W. H. Anderson will continue as an assistant general sales manager with responsibility covering special phases of the factory sales operation.

W. F. Switzer, formerly appliance merchandising manager, has been promoted to merchandising manager for the Frigidaire Div., now responsible for merchandising activity involving commercial refrigeration and air conditioning products, as well as appliances.

L. W. Smith will continue as commercial and air conditioning sales manager. This phase of Frigidaire's business is broadening rapidly, particularly in the residential air conditioning field, Lehman explained.

Trion Names Sweitzer To Residential Sales

McKEES ROCKS, Pa.—Trion, Inc. has announced the appointment of Richard E. Sweitzer to assistant sales manager in charge of residential sales.

R. E. Sweitzer

Sweitzer has been associated with Trion for the past five years and was formerly advertising and sales promotion manager.

No Shutdown

Copeland Employes Elected To Work Through Vacations

SIDNEY, Ohio—The majority of more than 1,400 production employes of Copeland Refrigeration Corp. here have elected to postpone or cancel their vacation plans for this year and remain on the job to help the company meet its customers' requirements, Copeland announced.

"Manufacturing and shipping operations," stated Frank J. Gleason, executive vice president, "will continue at the highest possible levels through the first two weeks in August, normally observed as company-wide vacation time. We will make every effort to fill customers' orders as quickly as is humanly possible."

The company's request to its employes stems from a 70% increased demand in 1955 for air conditioning and refrigeration compressors and condensing units, Copeland said.

For more information about products advertised on this page use Information Center, page 26.

Norge Holds Price Line Despite Steel Rise

CHICAGO — Norge Div. of Borg-Warner Corp. has issued a statment that it will not increase prices of the appliances it manufactures because of the price increases in steel brought about by recent wage increases for steelworkers.

"Like a lot of other manufacturers, we're just going to have to absorb higher material costs," stated Judson S. Sayre, president of the Norge Div.

Most all of the major steel companies have now increased both wages and prices, with the price increases averaging about $7.50 a ton in the types used by manufacturers of appliances and air conditioning equipment. However, the amount added to the cost of each unit is not very significant.

Buffalo Dealers Must Check Sidewalk Display

BUFFALO — Commissioner Joseph A. DeCillis instructed precinct commanders to acquaint appliance dealers with a city ordinance prohibiting display of unattended refrigerators outdoors.

The commissioner said he has received complaints that some merchants are displaying the refrigerators on sidewalks. He noted a potential danger for children who may become locked in them.

Travis of Carrier Dies

SYRACUSE, N. Y.—Thurlow Travis, 46, manager of the materials department in the Allied Products Div. of Carrier Corp., died recently at his office after suffering a coronary thrombosis.

Joe Boone To 'Track' Sales for Admiral

CHICAGO — Joe K. Boone, great great great grand nephew of Daniel Boone, has been named regional sales manager for Admiral, H. D. Conklin, general sales manager, announced. Boone will cover Indianapolis, Benton Harbor, Evansville, Ft. Wayne, Louisville, Nashville.

Conklin also announced the following regional sales manager assignments: C. F. Weeks, former field merchandiser, to cover Los Angeles, San Diego, San Francisco, Fresno, Phoenix, and Sacramento; L. L. Malin, former Pittsburgh branch manager, to cover Philadelphia, Newark, New York City, and Altoona; and W. F. Hand, former Denver branch manager, to cover Denver, Albuquerque, El Paso, and Salt Lake City.

"MISS EYE-HI," Carmeletta Gibbs, demonstrates Hotpoint's upside down refrigerator-freezer at the summer market in Chicago. New refrigerator-freezer is 11.3-cu. ft. model that "rolls out" for ease of cleaning, has 123-lb. freezer and an eye height fresh food compartment.

Crittenden To Direct Hotpoint Advertising And Public Relations

CHICAGO—Philip L. Crittenden has been named manager of advertising and public relations, Hotpoint Co., with responsibility for advertising, including television, as well as public relations, publicity, and merchandising services. He has been manager of public relations since 1952.

David H. Grigsby becomes national advertising manager, with direct responsibility for coordinating all advertising activities of product sections including dishwashers, home laundry, ranges, refrigerators, and a newly-created "Customline" section.

He was formerly merchandising manager of ranges.

For more information about products advertised on this page use Information Center, page 26.

Parakeet Promotion Gets Publicity

Store Offers $500 to Anyone Teaching A Bird To Repeat Tricky Slogan

CHICAGO—"If you want a crazy gimmick that will bring in the business, this is it," Bob Justis, Newport, Dela. dealer told a group of appliance dealers attending a recent bull session at the Merchandise Mart.

He got Wilmington area people talking about his store by offering $500 to anyone who could teach a parakeet to say the store's slogan: "Justis Bros. in Newport, next door to the post office and Justis reliable."

The idea that a parakeet could handle that mouthful appeared so absurd that it caught the public fancy. Even his brother was so sure that he would never pay off that he bet him $500 that he would never get a taker.

But, sure enough, one day a lady called and said that she had taught her parakeet to say "Justis Bros. in Newport, next to the post office and Justis reliable." Justis found that her parakeet could actually say it.

He returned with tape recorder and TV cameraman and spent hours trying to get the bird to repeat it before all that paraphenalia. But the task was accomplished, along with a film recording of him presenting the check. All this was presented over a television newscast, giving additional publicity.

'Smokey Bear' Giveaway Builds Traffic

Pony Baseball Team Wins Goodwill, Proves Good Tool for Outside Men

CHICAGO—When Sol Polk, large Chicago appliance dealer, puts on a promotion, it is no one-shot deal. Believing that repetition increases impact, his promotions run for weeks and even months.

Bill Hamilton, free lance promotion agent who handles Polk's TV advertising, described a few of Polk's promotions to appliance dealers attending an all-day bull session at the Merchandise Mart here during the summer markets.

Polk believes that good promotions must make people talk, "good, positive talk," Hamilton said.

As a prime example, he told about the "Smokey Bear" campaign Polk conducted some time ago. The idea, he said, came from seeing a picture of the president of the United States with a Smokey Bear doll, symbol of the U. S. Forestry Service's annual forest fire prevention campaign.

"We had to get Congress to pass a law to let us use the bear in our promotion and we agreed to give 5% of the proceeds to forest conservation," Hamilton explained.

Polk placed an initial order with a local toy manufacturer for 10,000 Smokey Bear dolls. He then offered a doll free to anyone making a purchase of more than $25. In addition, he notified the public that 5% of the money they paid would be set aside for forest conservation.

To kick off the promotion, Hamilton arranged for Polk to publicly present Illinois' governor with a Smokey Bear doll. This gesture made news for local newspapers and telecasts.

Thereafter, the Smokey Bear offer was used in newspaper and television advertising.

Headquarters for Conservation Badges

Another facet of the promotion was to make Polk stores "official headquarters" where children could apply for conservation badges making them honorary U. S. forest rangers.

Through the cooperation of the state conservation department, Polk arranged to have state forest rangers at his store to help children fill out their applications and to autograph membership cards in the Smokey Bear Forest Fire Prevention Force. Applications had to be sent to Washington, D. C.

The promotion created so much action, Hamilton recalled, that the U. S. Forestry Service was flooded with more applications for membership badges than it could handle.

50,000 Dolls Given Away In Three Months

In three months, he said, Polk gave away 50,000 Smokey Bear dolls to customers, with interest remaining high throughout the campaign. "The promotion was just as good the last day as it was the first," Hamilton declared.

In addition to strictly sales promotion such as this one, Hamilton also recommended that dealers promote good will among their immediate neighbors. For this purpose, Polk sponsors a complete "pony" baseball league for neighborhood youngsters.

Such efforts, he said, counteract any bad impressions caused by excessive noise and traffic inevitable around a busy store. And they are a real tool for the store's salesmen when working the neighborhood.

Hamilton advised dealers that, contrary to general opinion, TV advertising is not too expensive for the dealer to use. He suggested that they buy TV advertising just as they would any other product, giving the same considerations to their purchase.

Polk, he commented, sponsors a late movie program, which is relatively inexpensive.

"Some of the movies are so bad, they pay us to run them, which helps cut down expenses," he smiled.

While midnight may not be choice time, Hamilton figures that some 150,000 people out of a five million potential see the program each night. As different groups of people watch on different nights, the actual audience reached is considerably larger than that, he believes.

'Trick' Commercials

He pointed out that "trick" commercials, where the product does not perform as advertised (a "sturdy" lawn chair collapses or a toaster burns the toast) actually inspire a great many people to buy the maligned product.

For more information about products advertised on this page use Information Center, page 26.

Lakeland, Fla. Says Air Conditioning Overtaxes Sewers

LAKELAND, Fla. — According to City Manager D. O. Payne and City Engineer F. E. Wilson, wide use of air conditioners here has overtaxed the city sanitary sewers with enough extra water to create a serious, immediate problem.

Confronting the city is the problem of what to do about it. Informed sources said two moves are in the works. One would place the burden on the user to dig a disposal well to carry off water. It was emphasized that air conditioning discharge is almost pure and would not contaminate existing supply wells.

Otherwise, city commissioners said a storm sewer system will be needed to get rid of excess water now pouring into sanitary sewers and taxing them to capacity. The storm sewer cost is almost prohibitive, it was stated.

Payne, Wilson, and Building Official Walter M. Ruby, who brought up the problem, and City Attorney W. C. Rogers were appointed by City Commission to find a solution to the problem, possibly through a regulating ordinance banning discharge of the waste water into sanitary sewers.

Mitchell Delivering Flush-Mounted, 2-Hp. Room Conditioners

CHICAGO—Mitchell Mfg. Co. has begun delivery to distributors of its new flush-mounted, 2-hp. room air conditioner, it was announced recently by E. A. Tracey, general sales manager.

The big window unit is being added to the company's "Super High Capacity" line which also has units of ¾, 1, and 1½ hp. All units are of the same cabinet size and are interchangeable.

"Like all Mitchell's 1955 units, the new 2-ton model is engineered to comply with the new ARI-EEI-NEMA joint recommendation which provides that, starting in 1956, room air conditioners of ¾ hp. and up have power factors not less than 85%," it was stated.

"Rated power factor at the Underwriters Laboratories, Inc., conditions for the 2-hp. unit is 93%."

Suggested retail price for the 2-ton model number M-3005 is $599.95.

Bristol Names Nuber Gen. Field Sales Mgr.

WATERBURY, Conn. — Ernest Nuber has been promoted to general field sales manager for The Bristol Co., according to Harry E. Beane, vice president in charge of sales.

Nuber joined the Bristol sales engineering organization in 1929. He has served as Pacific Coast manager, export manager, manager of the company's application engineering department, and sales manager.

5-Million-Dollar Medium Priced Home Development To Have Air-Cooled Residential Air Conditioning Systems

YUMA, Ariz.—A $5 million development of medium priced homes, all to be equipped with Carrier air-cooled Weathermakers, was announced here recently by Lloyd A. Snook, Jr., vice president of the M & S Development Co.

Frank Porter of Carrier's Phoenix office said that this is the first mass project of more than 100 homes to be air conditioned with air-cooled equipment.

The project, which will eventually put more than 400 homes on the 150-acre tract, will have five models open by October, Snook said. The planned community will be known as Engler Estates, after the former owner of the ranch on which the project is located.

Each home will be placed on an 84-ft. wide lot. Houses varying in size from 1,200 to 1,430 sq. ft. will range in price from $10,500 to $13,900. They will have three bedrooms and two baths.

Spartanburg Firm Moves

SPARTANBURG, S. C. — Spartanburg Refrigeration Co., which handles Frigidaire products and other lines of appliances, has occupied its new building at 283 N. Church St., directly across the street from its former quarters. Maner L. Tonge is owner of the firm.

Timken Announces Three Appointments

OAKMONT, Pa.—A. V. Murray, president of Scaife Co., has announced the appointment of W. J. Chappell as national sales manager of its Timken Silent Automatic Div., Jackson, Mich.

G. M. Parker

W. J. Chappell

Chappell, who has been with the division for 23 years, has served as editor of the division's house organ, advertising manager, regional sales manager, and assistant sales manager. Between 1943 and 1945 he served with the U. S. Air Force as a classification specialist, rejoining Timken after his discharge.

T. A. Crawford, Timken vice president-sales, made it known that E. M. Stockdell has been appointed district sales manager for the division. Stockdell, who resides in Richmond, Va. will be in charge of territorial sales activities in Delaware, Maryland, Virginia, North and South Carolina, and Washington, D. C.

Stockdell has had many years in the heating appliance field. He served in the U. S. Navy during World War II.

Crawford also announced the appointment of Gordon M. Parker as assistant advertising manager. Parker's background includes several years in the advertising and sales promotion field in the Chicago area.

10 Refrigeration Firms To Show at Soft Drink Exposition Nov. 14-17

WASHINGTON, D. C.—Firms in the refrigeration field will be in the spotlight when the curtain rises on the 1955 International Soft Drink Industry Exposition in Miami, Fla., Nov. 14-17.

Bottlers from all parts of the country, representing the billion-dollar soft drink industry, will be on hand to see beverage coolers and water cooling equipment.

At this printing ten beverage cooler and water cooling equipment manufacturers have made arrangements for space at this event, the largest industrial exposition the city of Miami has ever had. The exposition will take place in the Dinner Key Exposition Hall and adjoining areas.

Beverage cooler and water cooling equipment manufacturers exhibiting are:

The Bevco Co., Inc., St. Louis; Crown Cork & Seal Co., Baltimore; Howard Refrigerator Co., Inc., Philadelphia; Kol-Flo Kooler Co., Bayonne, N. J.; The Liquid Carbonic Corp., Chicago; Mojonnier Bros. Co., Chicago; Nash-Kelvinator Co., Detroit; Potter & Rayfield, Inc., Atlanta; S. & S. Products, Inc., Lima, Ohio; and True Mfg. Co., St. Louis.

The exposition, which is sponsored by the American Bottlers of Carbonated Beverages, will open at noon on Monday, Nov. 14. On Tuesday, Wednesday, and Thursday the opening time will be 1 p.m., with the doors closing each day at 6 p.m.

Morris Resigns Posts at McQuay

MINNEAPOLIS — Philip S. Morris has submitted his resignation as executive vice president and director of McQuay, Inc., effective July 31.

Morris also resigned as an officer and director of American Automatic Ice Machine Co., a subsidiary of McQuay.

Morris joined McQuay in 1947 as assistant to the president, and has served as executive vice president and a director since early 1948.

New Firm Files

BUFFALO—A business name has been filed in the Erie County clerk's office for Commercial Refrigeration & Equipment Co., 1186 Seneca St., Buffalo, by Lawrence R. Bigelow, William H. Callahan, and Ralph R. Cox.

Twin City Milk Producers Assn. To Install 4,000 Bulk Cooling Tanks

MINNEAPOLIS — Bulk milk cooling tanks to serve milk receiving stations of the Twin City Milk Producers Association are now being installed, it was announced recently.

About 4,000 installations are to be made on dairy member farms. When the system is in full operation, milk will be pumped from the bulk tank in the milk house into tank trucks for delivery to the receiving station.

Sunset Equipment Co. of St. Paul is supplying the stainless steel tanks.

"The unit is installed on members' farms at no out-of-pocket cost to the member," it was explained. "Savings from alternate day tank truck pick-ups, lower handling costs, elimination of can-washing expense, etc., will be calculated and credited to members in proportion to the amount of milk deliveries. When a member's credit equals the cost of the bulk tank installation, he receives title to the equipment."

Reporting details of the project, the North Central Electrical League pointed out that of the 4,000 units to be installed by the Twin City Milk Producers Association, 3,750 will be equipped with motors of 2 hp. or less, 230 will have 3-hp. motors, and 20 units will have 5-hp. motors.

"The wiring in milk houses to serve the milk cooler and tank wagon will add up to 8,000 circuits of either #10 or #12 for a total of 320,000 ft.," the NCEL said. "In addition, 8,000 special purpose outlets will be required.

"Bringing the present wiring in the milk house up to the requirements for bulk milk cooling and handling will be paid by the farmer."

It was also reported that approximately 160 farmers in Otter Tail County are installing milk cooling tanks to serve a milk receiving station making bulk shipments to North Dakota.

Bally Names Kinney To So. Central Post

BALLY, Pa.—E. T. Kinney has been appointed south central district sales manager by the Bally Case & Cooler Co., Leon Prince, Bally sales manager, announced recently.

E. T. Kinney

Kinney will work out of Memphis and cover the states of Tennessee, Alabama, Mississippi, Arkansas, and Louisiana.

Before his appointment, Kinney was sales manager of the Mid-South Fixture Co., Memphis, which served as a Bally distributor.

DuPont Names Hoffman Sales Correspondent

WILMINGTON, Del. — Richard H. Hoffman has been named sales correspondent in the Chicago office of the du Pont Co.'s "Kinetic" Chemicals Div., and Douglas H. McKenna has been assigned as sales representative for its "Freon" refrigerants and aerosol propellents in the Milwaukee territory, the company has announced.

Carley Leases Space

DALLAS—The W. A. Carley Agency, manufacturers' agent for air conditioning, heating, plumbing, and industrial supplies, has leased offices at 2024 Farrington St. in the Trinity Industrial District, it was announced by W. A. Carley, general manager.

For more information about products advertised on this page use Information Center, page 26.

Small Heating Job Well Done Leads to Contracts for Big Air Conditioning Installations

ERIE, Pa.—How a workmanlike job on a simple home heating system led directly to thousands of dollars worth of future air conditioning and heating business was described recently by Ed Murphy, sales manager for Neth & Co., heating and ventilating contractor, here.

Here is the story in Murphy's own words:

"We had done the heating in the homes of these two doctors. When they got ready to build their new medical offices they said to the architect, 'Get Neth & Co. to design and install the year-round air conditioning.'

"It was agreed that there would be two separate contracts—one for the heating and air conditioning, and another for the actual construction.

"Well, we had never worked with this builder in spite of the fact that he is one of the best known in the area.

"The builder, Baldwin Bros., kept his eye on us right from the start, because he was not familiar with our work. To make a long story short, one day he asked if we were interested in looking over the plans of another medical building.

"In the six months since we started the first building, we have done over $10,000 worth of business with Baldwin Bros.

"It wasn't price business either. Baldwin Bros. has consistently shown an interest in doing things a little bit better, even though it might cost more.

"Right now we are working on trial residential installations. As soon as we work things out we expect to get the go-ahead signal for heating 200 homes which they are going to build this year.

"You'd be surprised at how far a little cooperation between builder and heating contractor goes toward making a house or commercial building really comfortable at a reasonable cost."

Murphy explained that in the medical building, which is 30 by 70 ft. on a concrete slab, "we designed a perimeter loop distribution system and dropped the hallway ceiling, using it for a return air plenum.

"We used a 160,000 B.t.u. gas-fired furnace, and for cooling a 3-ton unit with another two tons cutting in during peak load hours. Under wide roof overhangs, which help shade the building, fresh air intakes supply fresh air to the system.

"Exhaust fans in treatment rooms eliminate the medicated air that is usually associated with hospitals and doctors' offices."

"AIR CONDITIONED BARRELS" offer attracted many a customer with a wrinkle in his trousers and a smile on his countenance into the dry cleaning establishment which displayed this sign in a downtown area of hot, humid Dothan, Alabama recently. A 5-ton air conditioner kept the interior of the shop at a comfortable 75° to back up the offer made to perspiring passersby.

Cooper To Distribute Shana Mfg. Products

CHICAGO—The Cooper Distributing Co., Cleveland, has been named distributor for Shana Mfg., Inc.'s air conditioning and heating products in the Cleveland area, announced Harry G. Shaffer, president of Shana Mfg., Inc. here.

Eugene J. Gunn, general manager of Cooper Distributing Co., announced that both their main branch, Cooper Heating & Air Conditioning Co., and the east side retail branch, Economy Heating & Air Conditioning Co., will carry Shana products.

The Cooper Co. is owned by Herman Cooper.

Century Engineering Corp. Appoints Three Outlets

CEDAR RAPIDS, Iowa—Century Engineering Corp. has announced the appointment of Arthur Hahn Co., Hartford, Conn., and Modern Plumbing Supply Co., Rock Island, Ill., as Century heating and air conditioning wholesalers.

It was also announced that Sterling Hardware Co., Inc., Hazard, Ky., has been named to handle Century heating and air conditioning lines.

Arthur Hahn was appointed wholesaler for Connecticut and western Massachusetts, and Modern Plumbing Supply for the Quad-City area. Sterling Hardware will cover southeastern Kentucky.

Disciples of Christ Bldg. In Nashville To Be Cooled

NASHVILLE, Tenn. — Construction will start this summer on a new headquarters building for the Disciples of Christ Historical Society here. The $600,000 structure will be air conditioned.

For more information about products advertised on this page use Information Center, page 26.

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

Two middle-aged women who rented a summer cottage sight unseen were dismayed by its isolation. After a few frightened nights they paid an old man, who did odd jobs, to sleep in a shed near their door every night.

Following summer they rented the cottage again and assumed they could hire the same old man. At his cottage they found a sign posted:

"Wood supplied, odd jobs done, narvus wimmen slept with."—Royal Prince *Albert Hospital Magazine,* Sydney, Australia.

"Sign on the table of Bibles in a Hollywood Blvd. bookstore: 'David and Bathsheba—you've seen the movie, now read the book.' "—ERSKINE JOHNSON.

"Few daughters nowadays get to use Mother's wedding gown—Mom is still using it."—*Pipe Dreams.*

Marking the 100th birthday of Marshall Field & Co., *Advertising Age* comments that the store starts a second century "with its faith that the customer is always right slightly dented, but still in good working condition."

Definition of the Week

Eiffel Tower: "Empire State Bldg. after taxes."

Philosophy of the Week

To trust no man is worse than trusting all men.

"Inflation is getting to the point where the things that most of us would be better off without are costing too much."—*Cincinnati Enquirer.*

"That should be long considered which can be decided but once."—SYRUS.

"There can be no hope for a decent life for all mankind unless birth rates in most of the world are reduced to about one third of the physiological maximum."—Prof. Karl Sax, "Food Resources and Population Growth."—*Bulletin of Atomic Scientists.*

"Socialism is Communism with a time fuse."

Submitted by Ranco's Eddie Graff

"In our friendly neighbor city of St. Augustine great flocks of seagulls are starving amid plenty. Fishing is still good, but the gulls don't know how to fish. For generations they have depended on the shrimp fleet to toss them scraps from the nets. Now the fleet has moved to Key West.

"The shrimpers had created a Welfare State for the St. Augustine seagulls. The big birds never bothered to learn how to fish for themselves and they never taught their children to fish. Instead they led their little ones to the shrimp nets.

"Now the seagulls, the fine free birds that almost symbolize liberty itself, are starving to death because they gave in to the 'something for nothing' lure! They sacrificed their independence for a hand-out.

"Let's not be gullible gulls."—from an advertisement published by the *Barnett National Bank* of Jacksonville, Fla.

How Petty Can They Be?

John E. Murphy of Mohawk, N. Y., was jailed for raiding his own icebox. Fred Graves, Justice of the Peace, sentenced him to 15 days in Herkimer County jail on the complaint of Murphy's wife, Caroline, who charged him with petit larceny for the theft of three dozen eggs from the family refrigerator.

Where Is His Like Today?

First United States coin was a half dollar struck off in 1792 by John Harper of Philadelphia. On one side it read: "George Washington, the First President of the United States." On the tail side Harper had engraved an eagle and 13 stars.

President Washington turned it down for reasons of modesty and economy. As to the latter, he noted that the design would require new dies for each succeeding Chief Executive.

People Are Suspicious

Fellow in our industry reports that he revived an old experiment in sales psychology. On a busy street-corner he hawked dollar bills to one and all for 96 cents. Only three persons bought his bargain dollar bills. Those three were old friends and neighbors.

Our experimenter concluded that people were afraid of this bargain because they didn't know him, and hence didn't trust him.

Although he was selling a reasonably high grade product at an attractive price, he was spurned by all *except three buyers who were his friends and neighbors.*

Moral: It pays to advertise your name, and to make friends.

Washington Notes

Realizing that Congressmen love "ink" (publicity) newspaper correspondents now get up and leave the room together when Senate or House sessions are prolonged. Almost invariably, the reporters have found, adjournment follows quickly.

Americans now pay more in taxes than they do for their annual food bill. In 1940 United States citizens spent $17.1 billion for food and paid $12.7 billion in taxes. During 1950 the food bill stood at $52.5 billion while taxes were approximately $57 billion.

The difference will be even greater this year. Incidentally, food bills would be lower if your taxes weren't used to "support" (keep high) the prices of farm products.

News from Australian Correspondents

Unable to find a place to live in Sydney, Allan Wilkes and family tried to set up light housekeeping on a traffic island. They were fined the equivalent of nine dollars.

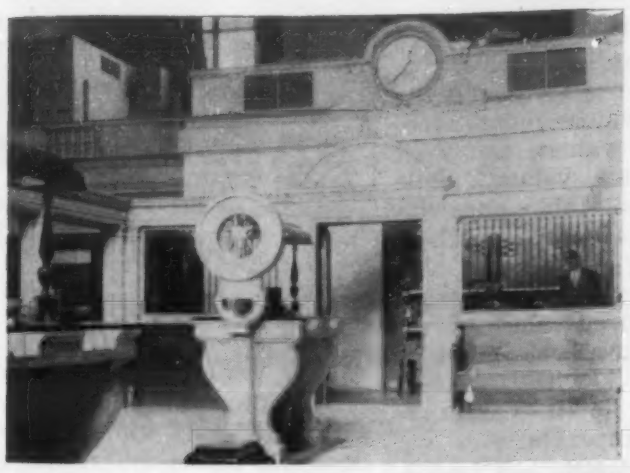
"Whatever happened to brother George," William Patterson, 74, had asked friends for 53 years.

Similar questions furrowed the brow of 62-year-old George.

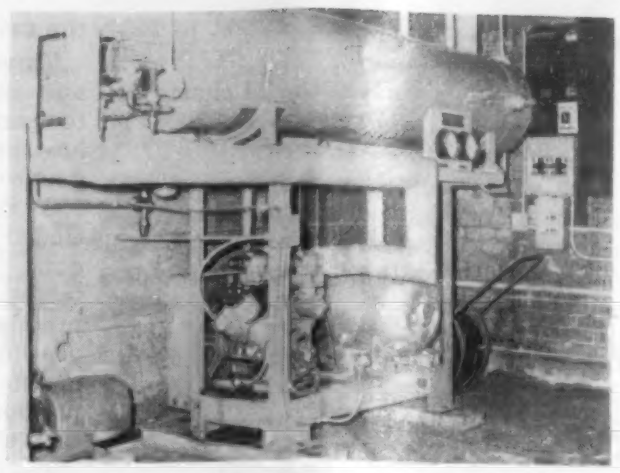
By happenstance their wives met in a Melbourne butcher shop, gossiped, and reunited the brothers.

Bill and George, it turned out, had been living a few houses apart for the last five years.

For more information about products advertised on this page use Information Center, page 26.



LOCATED ON THE MEZZANINE (top left corner) is the Worthington AVY 500 air unit, used to air condition the Virginia Trust Co. banking areas and directors' room. Discharge grilles, supplied by a main delivery duct, replace balusters from balcony railing (on either side of clock).



SUB-BASEMENT PROVIDED space for the Worthington 4JF4 compressor, and the water chiller, which supplied refrigeration to the 6-row coil in the air-handling unit. Condenser is mounted behind the chiller. Worthington chilled water circulating pump is seen at the left front corner.

AIR HANDLING UNIT as installed on the mezzanine discharged air into plenum chamber. Mezzanine itself was cooled by grille (upper right corner) on face of plenum chamber. Take-off ducts run on the floor and on the outside wall cooled other spaces without interfering with interior decorations.

Air Unit on Mezzanine Cools Entire Bank

Design Tricks Used To Cool a Variety Of Banking Areas

RICHMOND, Va.—How Catlett-Johnson Corp. here solved an air distribution problem faced by the firm in designing and installing an air conditioning system at Virginia Trust Co., Richmond, was described recently by Richard H. Catlett.

The spaces to be air conditioned were the mezzanine, the banking room, and the directors' room. Due to the interior design, it was important to avoid exposed ductwork, according to Catlett.

Odd Spaces To Handle

"The total area of Virginia Trust Co. is 60 by 100 ft., with a 50-ft. ceiling height over the public area and a T-shaped mezzanine 15 ft. above the main floor," he pointed out. "The mezzanine was finished with ornamental balusters and rail.

"The distance from the front of the mezzanine to the entrance doorway is 56 ft. and there are no fully enclosed private offices. One area behind the teller's cage is enclosed by an 8-ft. partition, with no ceiling and open doorway. Below one of the wings of the mezzanine is the directors' room."

Here's how the problem in air distribution was solved:

"A Worthington AVY-500 air unit with 6-row chilled water coil and high velocity filters was located on the mezzanine. This unit discharged into a large plenum from which the main delivery duct turned downward and followed the line of the rail at the floor.

"Balusters were removed from the front of this railing and two large grilles were installed in these spaces to supply the main banking area. Small grilles on the two sides of the leg of the T provide conditioning for the areas on both sides of the vault.

Duct Down Outside Wall

"Supply to the directors' room was through a second take-off from the plenum chamber by a duct running through a window and down the outside wall with delivery through a grille at the top of the directors' room window. The door to this room was undercut for relief and all returns were free to the unit.

"Supply to the mezzanine was through a grille on the face of the plenum chamber. The volume through this grille was controlled by means of an acoustic lined plate, larger than the grille and movable backward and forward from the opening.

"The refrigeration was supplied by a Worthington 28-ton water chiller assembled in place by the contractors. The machine room is in the sub-basement and circulating lines are run on the outside back wall of the building. Control is by modulating 3-way by-pass valve with the water at constant temperature."

Catlett-Johnson has since been awarded the contract for heating and air conditioning a new branch of Virginia Trust.

Du Pont Extends Basic Data on 'F-12', To Publish Information In Manual Form

MILWAUKEE—Technical information which will give the refrigeration industry improved basic data for greatly extended ranges of refrigerant pressure and temperature was revealed by the Kinetic Chemicals Div. of the du Pont Co. during the midyear meeting of the ASRE.

The report detailed results of several years' research which has resulted in new and more accurate thermodynamic data on "Freon-12" (dichlorodifluoromethane).

Completion of the project—conducted jointly by the Engineering Research Institute of the University of Michigan and the du Pont Co.'s Jackson and "Kinetic" laboratories at Deepwater Point, N. J.—was disclosed by du Pont's R. C. McHarness. He delivered a report of the work done jointly by Dr. B. J. Eiseman of the Kinetic Chemicals Div., Prof. J. J. Martin of the University of Michigan, and himself.

In the research study a total of 150,000 values were calculated. Of these, 40,000 are included in three saturation tables and 255 superheat tables, covering a temperature range of -150° F. to 515° F. and pressures from 0.14 to 588 p.s.i.a. That range, with measurements accurate to one per cent or better, "should meet all possible needs of the refrigeration and other industries" for many years, McHarness said. The original 1931 tables on "Freon-12" covered only the -40° F. to 140° F. range.

In several of the 14 charts the range is extended to 700° F. and 5,000 p.s.i.a.

Greatest usefulness of the new data, aside from increased accuracy and consistency, will be sharply decreasing the amount of interpolation required of engineers using existing technical data on "Freon-12."

Included in the new data, which du Pont's Kinetic Chemicals Div. is publishing in manual form as a refrigeration industry service, are ten pressure-enthalpy charts, including one broad-range, a single-sheet refrigeration-range chart, and eight large-scale diagrams covering the refrigeration range; a single broad-range entropy-enthalpy diagram, and three graphs of specific heat data, broken down by constant pressure, constant volume, and the ratio of pressure to volume.

Three saturation tables present data in the form of even temperature values, even absolute pressure values, and even gauge pressure values, while 255 individual tables are included to provide superheat data. Among the latter, 129 tables are devoted to constant pressure for even values of saturation pressures, while the remainder deal with constant pressure for even values of saturation temperatures.

Greater accuracy and less interpolation are achieved with the new data, the authors pointed out, because of the greater number of values and narrower temperature and pressure intervals. Previous charts were based on double the new measurements.

The new computations represent, it is said, the first major revision of thermodynamic data on its "Freon-12" in 24 years.

SLANTS on Service

"Slants on Service" is a handy "package" devised by the NEWS for its busy readers.

Will High Voltage Damage Motors?

Operating an open motor with a slightly higher voltage than the nameplate rating will do no harm, according to Clifton Smith, a district appliance supervisor for Carolina Power & Light Co.

Hermetics, however, can present other problems.

LOTS OF TROUBLES BLAMED ON VOLTAGE CONDITIONS

"Servicemen are inclined to blame a lot of motor troubles on voltage conditions," Smith says.

"In one such case a supermarket maintenance man felt that a few cases of minor repairs and one motor burn-out were due to improper voltage.

"It would be hard to determine just what voltage was needed because he had 110, 208, 220, and 230-volt motors. Normal delivered voltage is 118-236 and in this case it was 121-242."

With a variable voltage transformer tests were made on two heavy-duty motors driving open machines in the supermarket, Smith explained, with the results listed in tables below.

HIGH VOLTAGE HAD VERY LITTLE EFFECT

"High voltage had very little effect on these motors," he declares.

"Some servicemen get by with using 208-volt motors on 230-volt supply. If the supply is 240 volts they may or may not run into trouble.

"Most sealed units rated at 208 volts will trip on 240 volts if size of heater coil is not increased. In most cases increasing size of heater coil will void the guarantee," he cautions.

"While the serviceman may get by with the 208-volt motor on 240 volts, the reverse should never be tried. Never operate a 240-volt motor on 208-volt supply," Smith warns. "When possible, motor voltage should correspond with supply voltage."

Voltage Tests

¾-hp. motor for self-service meat case with nameplate rating of 230 volts, 5 amp.

Applied Voltage	Amps. Pulled	Watts Pulled
220	5.8	880
230	5.9	900
240	6.0	910
250	6.2	930
260	6.3	940
270	6.4	950

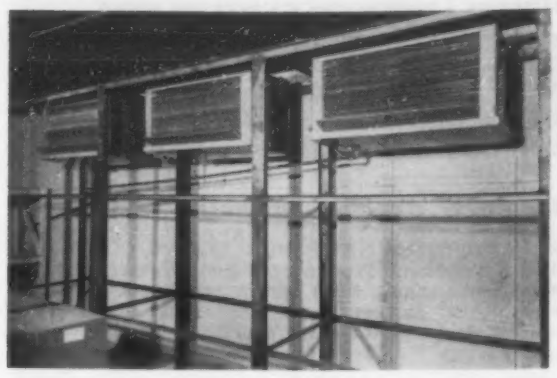
1-hp. motor for walk-in with nameplate rating of 220 volts, 6.6 amp.

Applied Voltage	Amps. Pulled	Watts Pulled
220	8.0	1,230
230	8.2	1,270
245	8.4	1,310
250	8.6	1,330
260	8.8	1,350

New Wis. Corporation

MILWAUKEE — Accurate Heating & Air Conditioning Corp. has been formed here with an authorized capital stock of 100 shares of common of no par value. Incorporation papers were signed by Leonard Cohen, 2634 N. 49th St., Milwaukee.

For more information about products advertised on this page use Information Center, page 26.



THREE Model 120 Bush "HG" hot gas defrost unit coolers maintain 0° F. temperature in 30 ft. by 18-ft. storage room of Associated Grocers' new frozen food warehouse near Pittsburgh. New style Bush units incorporate Inner-Fin coil construction and feature rapid defrosting.

Associated Grocers Frozen Foods Warehouse To Serve 200 Members

PITTSBURGH — Associated Grocers here recently completed construction of a large frozen food warehouse which will serve approximately 200 independent member grocers.

Facilities consist of two rooms, one 30 ft. by 18 ft., the other 20 ft. by 12 ft.

The new warehouse facilities, first to be erected by the company in this area, will be utilized by independent merchants within a 40-mile radius of Pittsburgh who are members of Associated Grocers. Plans call for making available an increasingly larger variety of frozen foods.

LARGE ROOM USED FOR GENERAL STORAGE

The larger room is used as the general storage area. Prefrozen food is transported through full size doors on racks or in large cartons. Three model 120 Bush "HG" hot gas defrost unit coolers maintain this room at approximately 0° F.

"Because of 'Inner-Fin' coil design, each of these new style units is actually two units in one: an evaporator and re-evaporator combined," it was pointed out.

"Inner tube of the Inner-Fin coil is the re-evaporator circuit and heat of compression provides source for heating gas during defrost cycle. Re-evaporation of liquid refrigerant occurs within the inner tube, eliminating dependence on suction line for this function."

ORDERS TRANSFERRED TO SMALLER ROOM

As orders are phoned in by member grocers, the desired produce is transferred to the smaller room, where it is packaged and left for pickup.

Small doors into the "pick-up" room prevent excessive cold loss during transference of the frozen food and during the time orders are being procured.

One model 120 Bush "HG" unit maintains the smaller room at just below freezing, with reserve capacity sufficient to obtain 0° F. if desired. This Bush unit, like the three installed in the larger room, defrosts from the inside.

Filing Bacon on End Keeps Case Neater, Cuts Shrinkage

LYNWOOD, Calif.—Filing its packaged bacon on end rather than laying the packages flat has helped the Food Giant supermarket here to maintain a neater self-service display case.

The management can get more packages in the same space. Customers can thumb through the packages and pick out the one they want without disarranging the entire display.

Management also claims that this manner of display cuts down on shrinkage and reduces the effect of lights on the meat.

Triplicate Delivery Tickets Reduce Invoicing Time and Expense

PHILADELPHIA—A delivery ticket made out in triplicate so that one copy can serve as an invoice saves both time and money.

A report on operating costs issued by the National Welding Supply Association and quoted by the National Commercial Refrigerator Sales Association explains:

"When delivery is made, customer retains one copy, two copies are returned to the office. The yellow copy is priced and mailed in a 6-in. window envelope to the customer. The white or original copy is retained in the office as our record of the transaction.

"This eliminates about 90% of our typewritten invoices and envelopes. To those firms that require more than one invoice, we provide them in the usual manner.

"This method simplifies bookkeeping for the customer and us as the invoice shows the signature of the person receiving the merchandise. We have saved five hours per week time. This time saving is very conservative."

S-M Supply Co. Opens

FRESNO, Calif. — The S-M Supply Co. has just been opened at 2237 McKinley Ave. here as a wholesale distributor for air conditioning and sheet metal supplies.

The owners and operators are George McMahan and David Scruton.

James E. Mason Named To Copeland Ad Staff

SIDNEY, Ohio—Copeland Refrigeration Corp. has appointed James E. Mason assistant advertising manager, W. G. von Meyer, sales and advertising manager, announced.

J. E. Mason

For the past three years, Mason has been with Grant Advertising where he directed Chrysler Airtemp's public relations and product publicity programs.

A graduate of the University of Detroit, he will direct many of the activities in connection with Copeland's expanding advertising, sales promotion, and public relations programs, according to the announcement.

They'll Do It Every Time

by

Jimmy Hatlo

Is Seasonable Business An Outmoded Bugaboo?

For too long, perhaps, it has been taken for granted that:

(1) Refrigerators are bought mainly in April, May, and June;

(2) Freezers are purchased always in May, June, and July;

(3) Air conditioners are dead if they aren't sold by August;

(4) Automobiles are a spring proposition;

(5) Furnaces are wanted only when autumn leaves fall;

(6) Advertising doesn't pay off in July and August, or December and January.

Blind adhesion to these shibboleths may be costing American industry millions of dollars.

Consultant on motivation research James M. Vicary, at a conference sponsored by the University of Michigan, laid to rest most of those ghosts.

"Let's consider retailing," he pointed out. "Spread between peak-and-valley months now is only 4.7%. Twenty years ago it was double that figure.

"Ditto with travel, amusement attendance, residential building, steel production, clothing and food consumption, and such oddly assorted activities as drinking spirituous liquors and having babies. Definitely the seasons are leveling."

Numerous social and geographical changes are responsible for this leveling-out emphasis. The year-after-year shift of workers from farms to cities is a prime factor. Farm production and income is the most seasonal of all occupations. Hence, the fewer consumers who depend on the weather for a livelihood, the more who can afford to buy almost anything at any time.

Again, restless geographical shifts have moved millions of Americans from the gruesome weather of New England to southern climes, and from the hot-and-cold sporadicity of the Middlewest to California, Arizona, and other sunny regions.

Inasmuch as the South and West, which have been accreting population so rapidly, enjoy relatively constant seasons, their inhabitants tend to purchase needs, and satisfy wants, on a 12-months basis.

Larger families, which are the rule nowadays, also diminish seasonal buying. "The first baby is liable to arrive any time; the next takes nine months." And after that they seem to "come like swallows." Purchases for children are ultra-important in this swing toward annual employment.

Other factors: easier credit, shorter work weeks, higher regular pay, longer and more frequent vacations, pension plans (which remove much of the need for saving money) and, yes, air conditioning.

Definitely seasonal buying is on the way out in the United States. As George Crain, eminently respected publisher of *Advertising Age,* puts it:

"The sweeping social and economic changes of the past three decades have profoundly affected every aspect of our national life. Perhaps it can best be put that new elements of flexibility are now present in America—higher incomes with larger savings and more cash available, a far greater personal mobility, new leisure, and new ways of spending it.

"In one business line after another, the results seem to have been a leveling off in seasonality. The yearly activity peaks seem to be less high than they were even a few years ago, the valleys in the sales curve are less deep.

"On the other hand, it would appear that the seasonal ups-and-downs in national advertising are even more pronounced now than they were 10 or 20 years ago. Thus this powerful business force—upon which companies rely so heavily to bring to the consumer the selling messages about their thousands of products and services—would seem to be increasingly out of step with consumer purchases, in one sales category after another.

"Have national advertisers taken full cognizance of all the changing seasonal patterns of consumer living and buying habits?

"Are many national advertisers putting too heavy a burden on their spring and autumn advertising—expecting too great messages into the ensuing seasons, when so many of their consumer sales are made?

"Are too many companies inclined to schedule their national advertising to coincide with factory sales or dealer-buying customers—rather than with the actual consumer purchases of their products?"

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AIR CONDITIONING & REFRIGERATION NEWS

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F. M. COCKRELL, *Founder*

'The Conscience of the Industry'

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VOLUME 75, NO. 12, SERIAL NO. 1,374, JULY 18, 1955

"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—*Charles A. Dana.*

OFF THE CHEST

Peirce Phelps
2000 Block N. 59th St.
Philadelphia 31, Pa.

Editor:

Your issue of May 30 contains excellent information relating to Home and Farm Freezer Specs.

However, may I take the liberty in suggesting that in compiling this information in the future, a request be made of manufacturers that, aside from giving their size, gross cubic feet, that they also specifiy the net cubic feet of storage space within the freezer.

I suggest this, based upon the fact that we have had experience in observing quite a difference between the over-all cubic measurement of the inside of the freezer and the actual usable cubic capacity. I believe that many of us are doing a dis-service to the consumer in quoting (without qualification) over-all capacity.

NEWTON B. MISELL

East Hills Rd.
Marcellus, N. Y.

Editor:

I have read with interest, Harold Henry Eden's "Off the Chest" remarks in the April 18 issue of the AIR CONDITIONING & REFRIGERATION NEWS, but who the heck is George? I suspect that he is the same guy whose *You'll Love This One* I am picking off my night table every night.

PAUL G. HEGENT

P.S. I would like to hear more about his book, *Peace and Progress.*

Has Far Reaching Results

Distributor Promotion Aimed at Locating Prospects, Softening 'Em, Signing 'Em Up

RICHMOND, Va. — A three-phase packaged air conditioner promotion designed to "locate prospects, soften 'em up, and sign 'em up" has been used by Gundlach & Co., Inc. here with what was termed "spectacular results."

The promotion included such features as a lemon delivered by an attractive woman, a cake of ice delivered by a husky Gundlach mechanic, and a red bandanna and a flashy sports shirt delivered by mail.

A pleasing angle of the promotion is that it is relatively inexpensive, according to Herman Gundlach, G-E distributor. The whole job cost only $500, he said, an investment that not only paid off in immediate sales but proved valuable over an extended period.

As the first step in the promotion, staged last summer, a man provided by a local advertising agency personally canvassed, on a door-to-door basis, a certain number of the non-air conditioned stores in Richmond's suburban shopping area.

The survey was made to find out (1) which proprietors were interested in air conditioning, and (2) which would be interested in receiving a proposal for an immediate installation of a G-E packaged air conditioner.

Fifty-one such proprietors were uncovered by the survey. But before sending his salesmen out to call on the proprietors, Gundlach employed a "softening-up" technique involving delivery of the lemons, ice, bandanna, and sport shirt at intervals of twice a week.

With each of these items was a calling card bearing an appropriate, handwritten message.

When a young lady delivered a bag of lemons to a Gundlach prospect, she also presented a card reading: "On a day like this—the coolest thing (next to G-E Air Conditioning) is lemonade!"

With the bandanna was this message: "If . . . you're mopping your brow over (1) the heat and (2) the lack of customers . . . then you need the enclosed. But G-E air conditioning would help both problems."

After the sports shirts were mailed out, Gundlach salesmen wearing similar shirts and carrying red bandannas in their hip pockets called on the softened up prospects.

Complete Cooling of Convention Facilities

CHICAGO — The Palmer House has recently completed air conditioning of its convention facilities, particularly the 20,000-sq. ft. exhibition hall.

Air conditioned space, exclusive of guest rooms, now includes all private dining rooms, the exhibition hall, grand ballroom and foyer, the Red Lacquer Room, all offices and shops on the street level, second and third floors, and dining rooms and cocktail lounges.

Five-hundred guest rooms, including 43 suites of two or more rooms, are now air conditioned. This year, air conditioning was installed on eight or more floors of the hotel.

In all, 2,500 hp. furnishes refrigeration for the system.

On the 25th floor, a dehumidifying room filters and washes outside air for use in the air conditioning system.

Dallas Branch Library Has 15 Tons of Cooling Donated

DALLAS — Two 7½-ton air conditioning units, donated by two businessmen, will be installed in the East Dallas Branch of the Dallas Public Library within the next two weeks, it was announced.

Lee Corrigan and Edwin B. Jordan contributed the units.

Louisville Utility May Quadruple Future Output

LOUISVIILE, Ky.—"The new demand for electricity created by air conditioning means my company will have to double its operations within the next 10 years and then double again in the following decade," declared L. H. Dahl, vice president of the Louisville Gas & Electric Co.

He told the Kentucky utilities commission, "Power consumption in the Louisville area, in my opinion, will go from 2 billion kilowatts in 1955 to 8 billion in 1975."

Award Dept. Store Contracts

ROANOKE, Va. — Johnston-Vest Electric Corp., this city, has been awarded contracts for air conditioning of Leggett Department Stores in Covington and Clifton Forge, Va.

Loren Fletcher Named Carrier Vice President

SYRACUSE, N. Y. — Loren Fletcher, general manager of the Allied Products Div. of Carrier Corp., has been named a vice president, it was announced by Cloud Wampler, chairman and president.

L. Fletcher

Fletcher will continue to manage engineering, production, and sales for Allied Products Div., one of the seven major operating groups of Carrier, the announcement stated.

The products of this division are food freezers, automatic ice making machines, unit heaters, mobile home room air conditioners, and refrigeration equipment for railway freight cars, and trucks, in addition to aircraft.

Fletcher has been with Carrier for 11 years, starting in the engineering department. In 1949 he was put in charge of the automatic ice maker operation and the following year was named assistant general manager of the newly-formed Allied Products Div. He has been its general manager for the past two years.

Prior to coming with Carrier in 1944, Fletcher served as chief engineer of Sunbeam Electric Mfg. Co. for five years following eight years as a design and development engineer with General Electric Co.

A graduate of Washington State college with B.S. and M.S. degrees in mechanical engineering, he is active in the American Society of Refrigerating Engineers and the American Society of Mechanical Engineers.

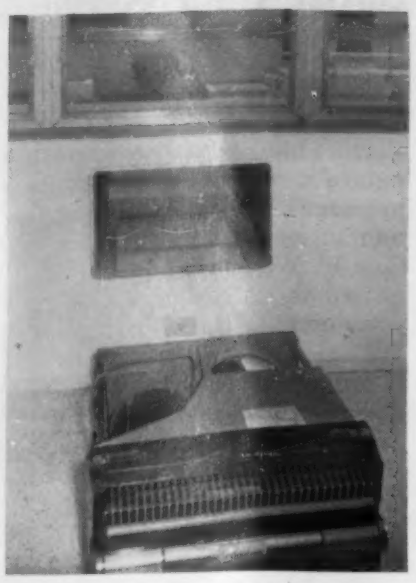
37 Through-the-Wall Units Cool 3-Story Apartment Bldg.

Installation Costs Cut To $10 to $12 Per Unit

MIAMI, Fla. — Thirty-seven Amana room air conditioners have just been installed through-the-wall in the new three-story Avondale Apartments at suburban Bal Harbour.

Because the outer shells of the units could be set in place and cemented while the building was being constructed, and the units easily installed later, the air conditioners were installed at a cost of only $10 to $12 a unit.

The room units were installed directly below windows and flush with inside walls, with only 17 in. protruding outside the building. There is a 1½-hp. unit in every living room and a ½ or ¾-hp. unit in every bedroom of each of the apartments.



TO INSTALL 37 room units, through-the-wall, conditioners' own outer shell, which has no louvers, was set in place while the building walls were being erected, and cemented and sealed against winds or hurricane.

INSTALLED BENEATH the window, the unit permits entry of more light, does not interfere with blinds, and is hurricaneproof because it is cemented in place. That's Stanley Halpern of Major Appliances, Inc., Miami.

The conditioners' standard outer cases or cabinets, which have no louvered sides, were set in place as the building's 10-in. wide block walls went up and then weather-sealed with plaster and cement.

Later, after the building was completed, the air conditioning units were easily placed in the outer cabinets, or sleeves, it was reported by Major Appliances, Inc., Amana distributor, and Sloane Air Conditioning Co., which installed the units.

Tywel Changes Name; Will Appoint Direct Factory Representatives

BROOKLYN — Alex Lewyt announced recently that the name of one of his companies, Tywel Mfg. Corp. here, maker of built-in wall air conditioning units, has been changed to Lewyt Air-Conditioner Corp.

He also announced that the company would begin immediately to appoint direct-factory sales representatives throughout the United States, Canada, and South America.

Tywel was started by Lewyt in January, 1954. Tywel, which is Lewyt spelled backwards, has been manufacturing individually-controlled air conditioning units for builders since early this year.

Prior to entry into the built-in wall air conditioning field, the company made window air conditioners for other manufacturers on a contract basis.

While Lewyt Air-Conditioner Corp. will continue the contract end of business, particular emphasis will be placed on the manufacturing and marketing of the new built-in wall unit.

Lewyt said that 15,000 built-in units have been sold in less than four months to builders of private homes, apartment houses, hotels, motels, and factories.

The sales, he said, were limited to the New York-New Jersey-Connecticut market and recently were extended to eastern Pennsylvania and Florida where direct-factory sales representatives were appointed.

"In the factory's immediate area we have been able to take care of builders through our own sales department," Lewyt stated. "However, distant markets require on-the-spot representation for full coverage."

He said factory prices for the unit would prevail for builders in all markets.

Lewyt said officers for Lewyt Air-Conditioner Corp. would be the same as those identified with Tywel. Irving Bottner is treasurer and vice president in charge of sales; Arnold Wolf is vice president in charge of manufacturing; and Madge Ferredy is secretary.

Boxer Is Fedders Ad, Sales Promotion Mgr.

BUFFALO—Harold S. Boxer has been appointed advertising and sales promotion manager of Fedders - Quigan Corp., it was announced recently by Anthony J. DeFino, vice president.

H. S. Boxer

Boxer comes to Fedders from the Television & Radio Div. of Westinghouse Electric Corp., Metuchen, N. J. where he has been advertising and sales promotion manager since 1952.

From 1945 to 1952 he was employed as sales manager for Freed Radio Corp. of New York.

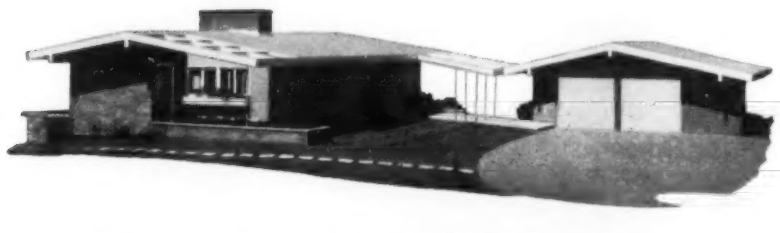
Boxer was graduated from Columbia university in 1936 with a B.A. degree in liberal arts.

For more information about products advertised on this page use Information Center, page 26.

This Ad is appearing in August, 1955 HOUSE & GARDEN MAGAZINE

Here's the New *Duo-Classic* thermostat

...Effortless Control of Summer and Winter Air Conditioning!



Duo-Classic Year-Round Air Conditioning Controls were selected for the 1955 House of Ideas. A milestone in the progress of all season comfort, this system will bring efficiency, ease of use and beauty into your home.

The Classic thermostat is a companion-piece to the Duo-Classic. It is designed for superior control of *either* winter or summer air conditioning. Both Classic and Duo-Classic control systems are available through your builder or air conditioning contractor.

It's handsome . . . *and so easy to use.*

In your new home, or your newly air conditioned home, you'll be happier with the Duo-Classic thermostat.

Engineers, architects and decorators have cooperated to create this thermostat which will hold the selected temperature within a fraction of a degree; eliminate complicated switching and actually add to the *beauty* of your home.

A great advantage of the Duo-Classic control system is the Universal Control Panel which accommodates any type of heating, any type of cooling, in any climate. This means easier, less expensive installation and simplified operation for you!

You'll be proud to have the Duo-Classic in your home. It will add pleasure and comfort to your living. Discuss Duo-Classic year-round air conditioning control with your builder or contractor.

This is the consumer announcement of a brand new year-round air conditioning control system!

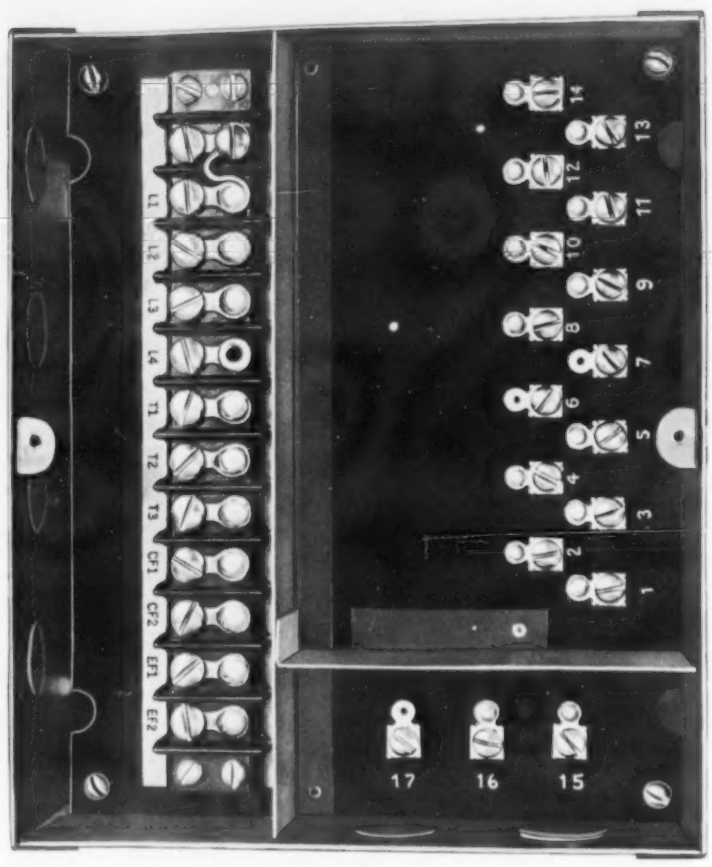
AND HERE IS HOW IT WORKS ▶

"Packaged Efficiency" —

describes the *Duo-Classic* Control System!

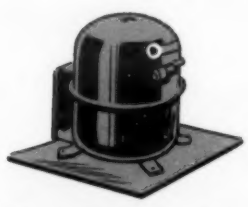
One Panel accommodates every combination of air heating and cooling components!

DETROIT Universal Control Panel is provided with high voltage and low voltage terminal strips for direct connection of the power supply line

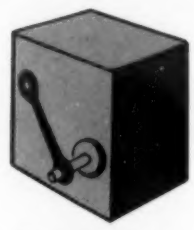


and —

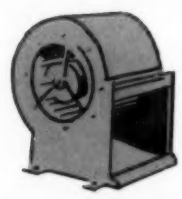
Condenser or cooling tower



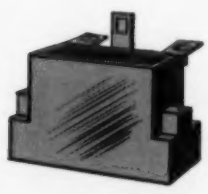
Compressor motor



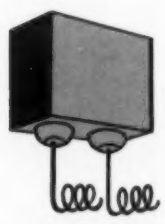
Change-over damper (self powered)



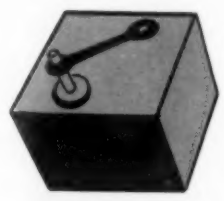
Evaporator fan



Electrical overload trip



High-low pressure cut out



By-pass damper (self powered)

Duo-Classic Thermostat

(Optional components from Detroit Controls)

More Benefits For The Entire Industry In This New Concept of Comfort Control!

For the whole air conditioning industry, Duo-Classic is an answer to the need for a simplified, more easily installed, less expensive control system. It brings all-season air conditioning one step closer to the desired "standard equipment" status!

Terminal locations on the Detroit Universal Control Panel are arranged so that the entire installation is simplified . . . it can be understood at a glance! Terminals are provided—prewired—for every function or component in the entire air conditioning system.

For the Manufacturer:

The efficient Duo-Classic control system will reduce your base cost, help you lower the tag-price, cut your assembly time and increase the useful efficiency of your air conditioners. This adds up to a better, more saleable product!

For the Contractor:

You can figure on less time for installation when you specify Detroit's Duo-Classic control system for all-season air conditioning. Lower costs and less chance for mistakes on the job are real advantages. Homes you equip with Duo-Classic will be more comfortable and more valuable!

Existing heating controls

. . . and other components installed in the air heating-cooling system.

For the Supplier:

Since the Duo-Classic thermostat together with the Detroit Universal Control Panel will provide superior control for a great many different types of air conditioning jobs, your inventory requirements are simplified! This efficient, flexible control system will be popular . . . promote it and increase your sales!

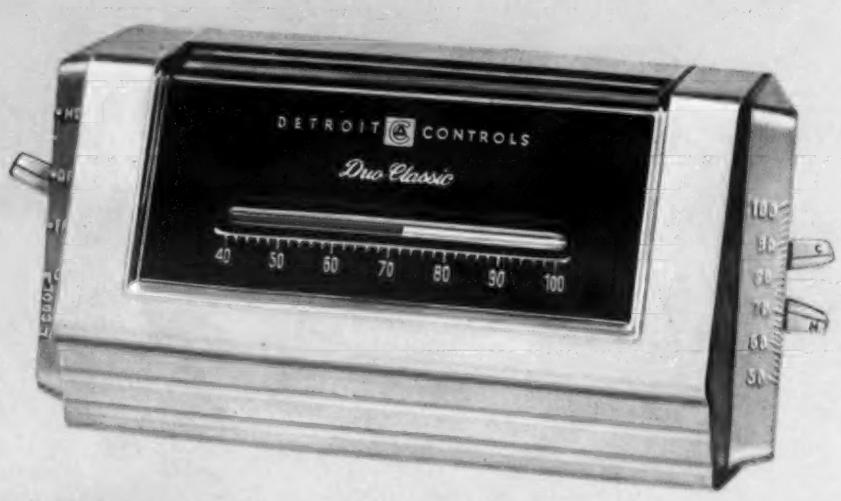
For the Home Owner:

You'll thank your lucky stars *your* home has the efficient Duo-Classic Control System! All temperature regulation and selection of heating, cooling or ventilation are set at the handsome Duo-Classic thermostat. It will be your "silent servant" for comfort.

This is another new product of

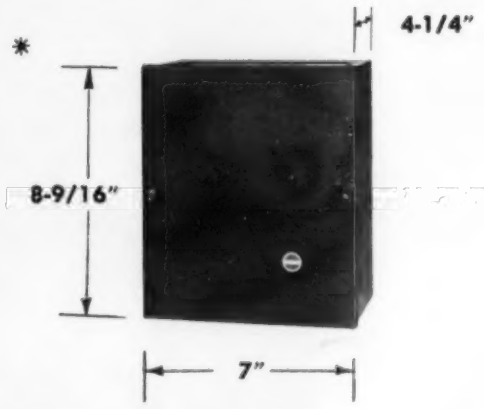
DETROIT CONTROLS Corporation

For Complete—All-Season Air Conditioning Control



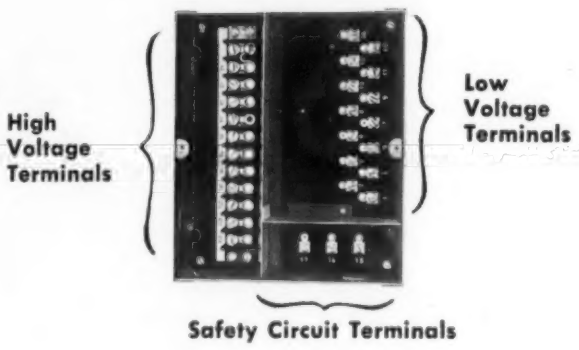
You need only Install the DETROIT Universal Control Panel and the *Duo-Classic* thermostat

It's the NEWEST ★ MOST EFFICIENT ★ COMPLETE control system!



Install the Universal Control Panel on or near the air conditioning unit

*Slightly larger size for models above 5 h.p.



Terminal locations are set up for efficiency. Understood at a glance . . . Easy to work with!

SPECIFY ★ SELL ★ INSTALL . . . the Duo-Classic all-season air conditioning control system—for simpler, quicker installation . . . *more* Efficiency and Customer Satisfaction!

DETROIT CONTROLS CORPORATION
5900 TRUMBULL AVE. • DETROIT 8, MICHIGAN
Division of AMERICAN RADIATOR & STANDARD SANITARY Corporation

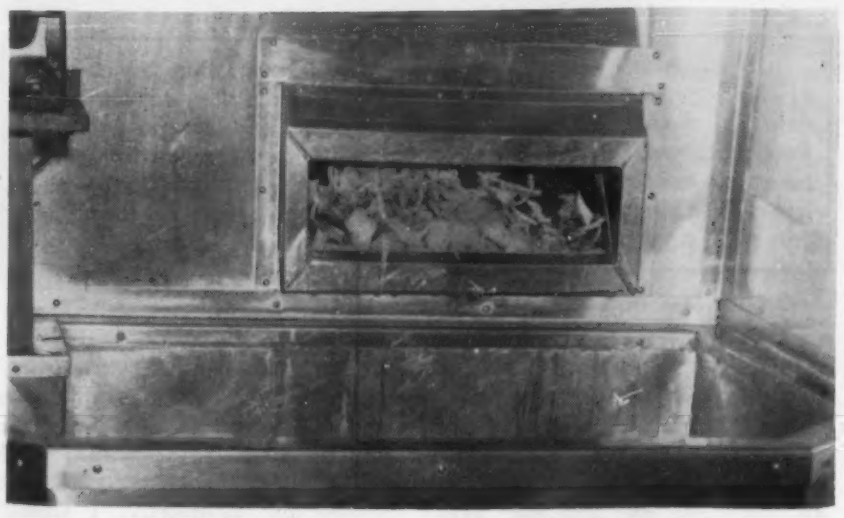
Representatives in Principal Cities • Canadian Representatives:
RAILWAY AND ENGINEERING SPECIALTIES, LTD.,
Montreal, Toronto, Winnipeg.

AUTOMATIC CONTROLS *for* REFRIGERATION
AIR CONDITIONING • DOMESTIC HEATING • AVIATION • TRANSPORTATION • HOME APPLIANCES • INDUSTRIAL USES

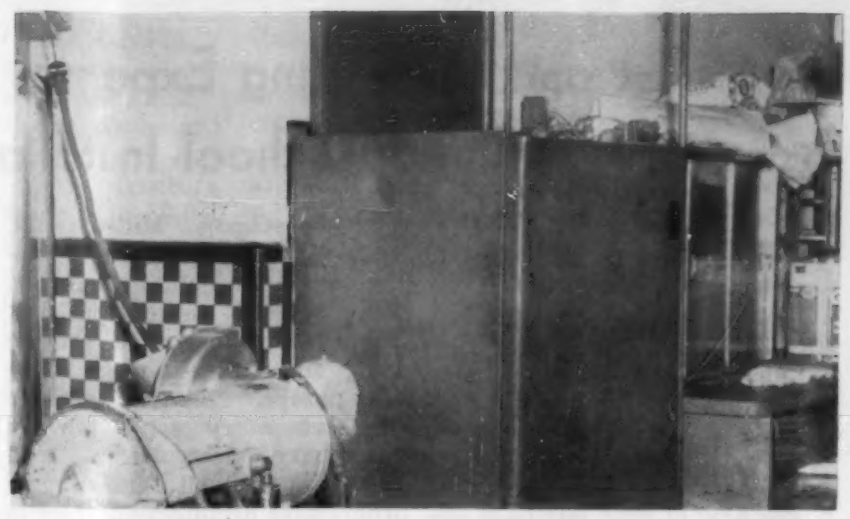
Form No. 1666

Litho in U.S.A.

Through-the-Wall Installation of Ice Maker Saves Steps, Builds Goodwill



RIBBON ICE spills into stainless steel bin within easy reach of employes.



ICE MAKER, installed out of the line of traffic, supplies chute in through-the-wall installation.

OAK CLIFF, Texas—A simple change in an ice-maker installation which permits ribbon ice to fall through a slot in the wall into a stainless steel bin below, saves from six to eight man-hours of work per month at the Crump Cafeteria here, according to B. B. Crump, owner.

A small cafeteria seating 110, the Crump operation has been severely taxed for space. Consequently, when Crump ordered a York ribbon-ice machine installed some time ago, there was no space for it behind the cafeteria line.

Space Problem Called for Ingenuity

This meant that the machine would have to be installed in the kitchen itself some 20 ft. away from the entrance way from the rear of the cafeteria line, into the food preparation area. Naturally, this meant not only a lot of extra steps on the part of cafeteria personnel in order to reach the ice discharged from the machine, but the danger of accidents from heavy traffic through the doorway.

Consequently, after studying the problem with the Dallas Air Conditioning Co., dealer who supplied the machine, Crump checked upon a highly effective solution.

18-In. Opening In Wall

This was to mount the ice maker pan on the kitchen wall where it is out of the way of busy cooks, and to cut an 18 by 6-in. opening at the discharge port of the machine. This, as shown in picture, was enclosed with bright stainless steel and a triangularly-shaped ice bin was built of stainless steel beneath. Now the machine can produce up to 2,400 lbs. of ice every 24 hours, dropping direct into the bin beneath from which waitresses, cafeteria line employes, and cooks can help themselves from a convenient stainless steel scoop.

Not only have wasted steps and time been done away with, but the "through-the-wall" ice system is responsible for much interest and curiosity on the part of visiting customers, according to Crump.

"We probably have more question as to how the ice which the customer sees dropping through the slot is produced, than on any other function in the restaurant," he said.

"This gives us an opportunity to point out to the customer the extremely modern equipment used throughout and to build goodwill in the process."

Saunders Names Rusk

NEW YORK CITY—Glenn O. Rusk has been appointed manager of the Process & Power Div. of Kerby Saunders, Inc., mechanical contractor here.

Water-to-Water Heat Pumps Found Practical In All U. S. Climates

First Cost and Operating Expenses Reported Favorable In Florida School Installations

Heat pump installations in Florida schools is the subject of the second portion of a speech by C. W. Millsom, vice president in charge of advertising for Acme Industries, Inc. The first instalment of the article dealt with two residential water-to-water heat pump installations. A third portion, to be published next week, will discuss the subject of water treatment for such systems.

(Continued)

"Now let's hop all the way across the country to Florida and talk about an entirely different type of application.

"The first installation of these water-to-water heat pumps in school buildings was in Pinellas county, Florida, some three years ago and the total horsepower now of heat pumps in the schools of this one county alone are between 1,500 and 2,000 hp. while counties immediately adjacent to Pinellas county, due to the success of these installations, have now or are having at this present moment this same type of system installed in their new schools," Millsom said.

"Let's first consider the design of these buildings and in doing so let's discuss the first one of this new group of schools using the water-to-water type heat pumps. This was the 74th St. Elementary school in St. Petersburg, designed by Phil Kennard, a well known and progressive architect-engineer in that area, so that the structure itself, as are the others, is beautifully functional.

Nearly Perfect School Structure

"The school rooms, for example, are all on one floor for safety so that each room has a choice of ground floor exits and each room has two light exposures. All rooms are separated but still interconnected. In short, it is as close to a perfect school structure as you probably could get and one that is being used more and more throughout the country.

"Nevertheless, this type of design certainly presents plenty of problems to the heating engineer as the distances involved, the number of exposures in the classrooms, the variety of heating loads occurring at different times in various parts of the building all pose problems.

"Also to be considered are the school requirements of complete safety, average first cost and reasonable operating cost, freedom from the necessity for skilled operation and maintenance personnel. Considering all methods of heating practically everyone of the normally used heating methods failed in one way or another," Millsom declared.

The 74th St. Elementary school is 216 ft. from east to west and from north to south it is 320 ft. with various wings comprising the over-all structure.

"The progressive architect-engineer as well as a progressive school board and school officials then decided they would like radiant floor heating in all the classrooms, primarily, I think, because on cool days in Florida, it might get 40° or lower. They're really cold.

"The various methods of supplying heat to these floor panels were considered. The subject of boilers for each wing which meant a boiler house and stack was finally decided against as it would spoil the functional design of the buildings.

"It was finally decided to seriously consider the installation of a water-to-water heat pump for each wing. Estimated operating costs were in line with the known operating costs of other fuels in comparative existing schools and estimated first costs were competitive.

Operating Costs Below Estimates Furnished

"Installations since then in all new school buildings have been pretty much following this distinct pattern due to the fact, as I will show you later, the operating costs were actually at or below estimates furnished them by the members of the very cooperative power company, the Florida Power Corp., and in this instance, Guy Hall particularly. The initial costs were actually below those figured for conventional heating systems.

"Actual costs for operation were found to be lower at the end of the first full year than the operating costs of the last school built before this one, just a year earlier and within a few short blocks of this 74th St. school, using fuel oil and up-to-date methods of heat distribution," Millsom said.

"Since the heat loss for each of the classroom wings (four classrooms) was 128,000 to 130,000 B.t.u. or 2.15 B.t.u./sq. ft., it can be seen that to carry the load with plenty of safety, a 7½-hp. water-to-water heat pump could be used. Careful consideration was, of course, given to holding the connected load to a minimum so that the demand charges would be down as this is a 12 months cost. Therefore, in this school five 7½-hp. Flow-Temp water-to-water heat pumps were used.

Year-Round System For Cafetorium

"One unit is a year-round heat pump used for the cafetorium where the students have their lunches at noon and then is also used for an auditorium. This 7½-hp. unit supplies heated water in the winter, cooled water when required, to a standard air handling unit consisting of filters, water coils, and blower with a ½-hp. motor. This air is

(Continued on next page)

For more information about products advertised on this page use Information Center, page 26.

Heat Pump Installations--

(Continued from preceding page)

then distributed through ductwork to the space so that heating and cooling as required is available 12 months of the year.

"Since each wing has approximately the same heat loss one 7½-hp. heat pump supplies hot water to the floor panel of the wing containing the administration and library building while the other three units each supply a classroom wing.

"I might mention at this time that the school officials did not feel that the people generally were at the point yet where they would look favorably upon air conditioning of the classrooms so that the classrooms themselves are heated only. With the type system they have installed they can have an air-handling unit installed and then supply heated or cooled water from the heat pumps to these units to add air conditioning at any time for a couple hundred dollars for each wing," Millsom said.

Wells Are Primary Water Source

"The primary water supply for the entire system of each school is a well drilled just outside the building which would have been necessary for some of these schools regardless as the area is expanding so fast that these schools that have been built are all pretty much in the outlying areas. The water is supplied by one 3-hp. pump.

"We, therefore, find that the connected load of the five 7½-hp. heat pumps, 37½ total compressor horsepower, will produce a total of over 540,000 B.t.u. With the customary accepted rating of 2,547 B.t.u./hp., we have a performance ratio of 5.7 to 1, against the very good figures in Wisconsin of a little over 4 to 1, because we have higher water temperatures.

"The total connected load of all motors (five 7½-hp. compressor motors, five ½-hp. circulating pumps, and the 3-hp. well pump) is 43 hp. or a ratio of a little better than 5 to 1.

"We, therefore, can see that if the design data was correct, the heating would be accomplished with a 2¢ per kwh. charge at the rate of 7,890 B.t.u./penny of cost. If we check other fuels, let's take oil for example at 14¢ per gallon, it means that we get an average of about 7,750 B.t.u./penny and if we take gas at the average rate in Florida of 85¢, we find that this would give us about 8,800 net useful B.t.u./penny.

12 to 15 Hours Needed for Pre-Heating after Weekend Shutdown

"The school officials stated they would be perfectly satisfied with a 24-hour pre-heating requirement. The comfort zone has actually been reached in not over 12 to 15 hours after holidays or long weekends. It has been found that under daily usage conditions it has never taken over four hours after a night shutdown even with some of the cold spells they have experienced recently.

"One of the reasons for this was that they decided not to insulate the floor slab. This has not been detrimental in any way and in fact besides providing faster pickup it has prevented excessive room temperatures when the outside temperature might climb fast after a cold night and early morning and the light load and children were in the room.

"The first cost of these heat pump systems averaged approximately 91¢/sq. ft. while the central boiler and radiation systems previously installed averaged out at about $1/sq. ft. Add to the boiler figure the cost of a building and stack while to the heat pump you would add the costs of the well and supply pump and it definitely points to the fact that these heat pumps cost them less in first costs and now have cost them no more, if as much, in operating costs without difficulties or maintenace problems," he said.

(To Be Continued)

G-E Appoints New Wholesaler In South Bend, Ind.

BLOOMFIELD, N. J. — Appointment of South Bend Electric Co., Inc., South Bend, Ind., as a wholesaler for G-E Weathertrons and water coolers has been announced by General Electric Co.

South Bend Electric will distribute Weathertrons in the Michigan counties of Berrien, Cass, Saint Joseph, and Van Buren, and the Indiana counties of Cass, Carroll, Elkhart, Fulton, La Porte, Marshall, Porter, Pulaski, Saint Joseph, Starke, and White.

The firm will also distribute water coolers in the Illinois and Missouri area.

G. R. Lininger is president of the firm.

Colonial Pontiac Will Get Cooled Building

MIAMI, Fla. — Construction has begun on a new, completely air conditioned, $450,000 building for Colonial Pontiac at 83rd St. and N.W. Seventh Ave.

The structure will contain more than 30,000 sq. ft., incorporating executive, sales, and accounting offices together with new car showrooms and service facilities.

Church To Be Cooled

NASHVILLE, Tenn. — Construction will get under way this summer or fall on the new $750,000 St. Henry's Catholic church, school, and rectory at Highway 70 at Vaughan's Gap Rd. The church and auditorium will be air conditioned, according to the Rt. Rev. Joseph H. Siener, pastor.

Bush, Heat-X Name Stewart as Sales Engineer In Ohio

WEST HARTFORD, Conn.— Bush Mfg. Co. and Heat-X, Inc. have announced the appointment of Richard Stewart as a sales engineer covering the northeastern part of Ohio.

R. Stewart

Stewart is a graduate of the U. S. Naval Academy and served in the Navy through the war.

After this he worked for General Electric Co. in the Air Conditioning Dept., then as chief engineer for an air conditioning contractor in Baltimore.

Spence Tells Refrigeration Servicemen:

Your Repair Bills Bite Deep Into Grocer's Slim Profits

By George M. Hanning

DETROIT—The meager net profit that a food merchant makes has everything to do with refrigeration service, J. H. Spence, service manager for the Hussmann Refrigerator Co., reminded Detroit servicemen here recently.

A grocer, making an average net profit of 2% or less on his sales, has to sell $1,250 worth of food products in order to pay a $25 bill for changing an expansion valve, he said.

So it behooves the serviceman to acquire the know-how needed to do a repair job properly on the first call and save his customer as much unnecessary expense as possible, Spence emphasized.

Spence spent an afternoon answering general service questions that had been submitted to him in advance by Detroit area servicemen. The meeting was sponsored by Detroiter Refrigerator Mfg. Co., local Hussmann distributor.

He stressed hard the need for the serviceman to properly evacuate and dry a new system, outlined the tell-tale signs of moisture in the system, listed a few essential instruments that every serviceman should have, told when an oil separator should be used, described the use of a crankcase pressure limit valve, outlined some differences between "Freon-22" and "Freon-12" systems, and explained why "Freon-22" undeservedly got a "bad name" as a critical refrigerant to work with.

Up to two or three years ago, Spence declared, all low temperature fixtures were manufactured as self-contained equipment and the manufacturer universally dried their systems to approximately -70° dewpoint.

But with the introduction of remote low temperature equipment, the manufacturers were placed at the mercy of the man installing the fixtures. It was left up to him to properly evacuate and dry the system. All too often, this has not been done, Spence asserted.

Thirty years ago, servicemen were taught that the biggest enemy of the refrigeration system is moisture, Spence asserted. This is still true today. If you get moisture in a system, get it out as quickly as possible or you are in for major trouble, he warned.

Why Drying System Is So Important

Stressing that proper drying is even more important in low temperature cases than in normal temperature equipment, Spence explained that as refrigerant temperature dropped, its ability to hold moisture in suspension decreased.

In low temperature cases having a -25° F. coil temperature, "Freon-12" will hold approximately 1½ parts of water per million parts of "Freon."

The driest refrigerant available from a wholesaler or a manufacturer has 4 to 6 parts per million, because the refrigerant manufacturer's tolerance is 10 parts per million, Spence said.

Refrigerant vapor, under certain conditions, will hold seven times as much moisture as liquid refrigerant. You may have at least 42 parts per million of moisture in the refrigerant if you charge as a vapor, he said.

If the refrigerant in a low temperature system will hold only 1½ parts per million, what happens to the other 40½ parts? It forms ice at the expansion valve. Spence recommended that every time the serviceman adds refrigerant to a low temperature system, he put a drier on the charging hose and charge the system through the drier.

Because there is no chance of getting oil in the drier, it can be reactivated repeatedly and used over and over again. After charging a system, take the drier home, put it in a 350° F. oven for a few hours, and it will be ready to use again, Spence advised.

He also recommended that the serviceman get a "good," efficient vacuum pump, one that will pull a 30-in. vacuum.

A pump that pulls 29 in. is not good enough, Spence declared. At 29 in. of vacuum, the boiling point of water is approximately 70° F. At 30 in., it is 35° F. That is where you get the desired results from a good vacuum pump, he asserted. No benefit is derived from using a 29-in. vacuum in a room where the temperature is less than 70° F., he asserted.

"You can't afford to take the calculated risk on not doing a good job of evacuating," he stated.

He recommended the triple evacuation method as a sure way of getting a system dry. He suggested that the serviceman first blow out the line with dry carbon dioxide or dry nitrogen to remove scale and other foreign material. Then make final connections, test the lines for leaks, and pull a 30-in. vacuum.

Break the vacuum with "Freon-12" or "Freon-22" charged through a drier, bringing the system up to 0 lbs. pressure. He suggested using "Freon" for this work, because "it is also one of the best solvents you can use to flush out a system."

Pull the system down to 30 in. of vacuum and charge with "Freon" twice more. Then you can be sure you have a dry system and the whole process will take an hour or less on most food store installations.

Five Tell-Tale Signs Of Moisture

Five tell-tale signs of moisture in a system were listed by Spence. They are discolored oil, a dark brown condition in the drier, muck on the base plate of the compressor, carbonization on the valve plate, and discoloration on external expansion valve parts.

Instruments that every serviceman should have to do a good job of checking a system are an amprobe, an ohmmeter, and a low pressure recorder, Spence said.

A low pressure recorder connected to the suction service valve will provide a 24-hour record of the system.

"This is a big time saver," Spence declared. "It can tell you everything you want to know about a system and you don't have to waste time reading gauges. As a permanent record of the system's operation it can be very valuable.

"If you have modern instruments you can really check a job, show the customer what is wrong before you start, and prove that it is working properly after you finish. Using instruments builds the customer's confidence in your abilities, permits you to charge more for your work, and will bring you more work than you can handle."

(Continued on next page)

For more information about products advertised on this page use Information Center, page 26.

Service Why's and Ways--

(Continued from preceding page)

An oil separator has two purposes, Spence explained. One is to keep oil in the crankcase and the other is to prevent oil dilution of the refrigerant.

"The more oil you get in the low side of the system," he asserted, "the less refrigerating effect the refrigerant will accomplish."

Causes of Poor Oil Return

He noted that even when the proper, recommended line sizes are used, there are five conditions that will cause poor oil return to the crankcase.

These are:

1. A restricted screen at the expansion valve.

2. An expansion valve that is not open enough to feed the coil fully.

3. Low head pressure that will cause flash gas at the expansion valve and improper feeding of the coil.

4. Clogging up the screen in the suction line at the suction chamber.

5. In some compressors, clogging of the oil return opening between the suction chamber and the crankcase through which oil returns to the crankcase may be a cause. This can be cleaned, Spence said, by taking off the valve head and plate, disconnecting the suction line, removing the screen, and cleaning out the opening with baling wire.

As any of these five conditions could occur at any time on a low temperature system because of poor application engineering or workmanship on the part of the installer, an oil separator would serve to prevent oil dilution of the refrigerant, Spence said.

However, since the design of some hermetic condensing units prevents excessive oil pumping, good, clean, dry installations with an efficient filter-drier in the refrigerant line discounts the possibility of restrictions due to dirt and scale.

Consequently, a good rule to follow is—learn the characteristic of the condensing unit being installed. If it is found it pumps excessive amounts of oil, use an oil separator with those units.

If the unit doesn't pump oil in sufficient quantities to dilute the refrigerant then an oil separator is not required in the system, Spence explained.

He pointed out that if the serviceman does not get the temperature he should for the pressure shown on a compound gauge, the chances are that there is oil dilution of the refrigerant or abnormal pressure drop.

Spence explained that whenever you put a condensing unit on a low temperature application where, after the defrost cycle, the crankcase pressure rises about 40 to 50 lbs., an overload protection device must be used in the suction line to prevent overloading the motors that could blow fuses or cause a motor burn-up.

This protection can be provided by a crankcase pressure limit valve, he noted. He said that Hussmann uses such a valve in the suction line of its "Freon-22" cases but not in its "Freon-12" cases. A pressure limit expansion valve is used with "Freon-12" cases.

In answer to a serviceman's question on why, with long piping runs, it would not be better to put the crankcase pressure limit valve at the compressor, Spence replied that the manufacturer never knows how many cases are going to be used on a single compressor. He added that with a valve in each case, more efficient control is obtained than with a single large valve at the compressor.

Differences Between 'F-12,' 'F-22' Systems

Turning to some of the differences between a "Freon-12" system and a "Freon-22" system, Spence noted that the boiling point of "Freon-22" is 20° lower than "Freon-12" and normal head pressures were about 50 lbs. higher.

He pointed out that with "Freon-22," the oil separates at -30° F. and the lower the temperature the more separation occurs. At the same time, "Freon-22" will hold 40½ times more moisture in suspension than "Freon-12."

"This means the serviceman must do a more workmanlike job of drying a 'Freon-22' system," Spence explained, "because the system can acquire much more moisture without any tell-tale freezing at the expansion valve."

He said that for every pound pressure drop with "Freon-12" the condensing unit loses about 18% capacity, while with "Freon-22" the capacity loss is approximately 8%.

Because of differences in the latent heat of vaporization between the two refrigerants, a "Freon-22" system can use a 30% smaller capacity condensing unit than on "Freon-12" system. And, as less "Freon-22" needs to be circulated than "Freon-12," smaller line sizes are required to give the same capacity.

"Once you know the different characteristics of 'Freon-22' you will find that it is no more difficult to work with than 'Freon-12,'" Spence declared. "It is not a critical refrigerant to use. Much of the past feeling against 'Freon-22' was caused by purely mechanical troubles that were not the fault of the refrigerant."

He said that "Freon-22" had been falsely accused of causing motor burnouts on 5-hp. hermetic compressors. Actually the fault lay in mechanical problems, improper drying of systems, failure to follow manufacturers' line size instructions, and improper hermetic motor protection.

To protect against motor burnouts on hermetics, Spence recommended a fast trip heater and spindle. This will not cause nuisance tripping, but will work as well as a standard trip spindle and heater as long as there is no mechanical trouble, he said.

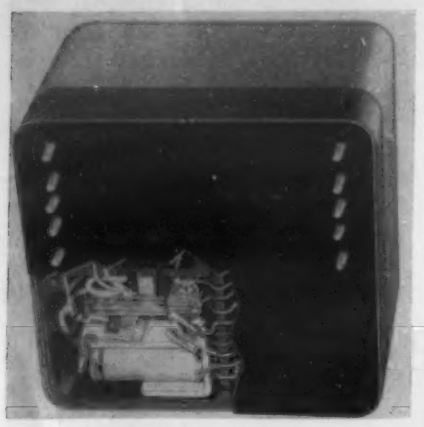
Asked the perennial question of where is the best place to put a drier, Spence replied that the most efficient place would be between the expansion valve and the coil. But as this is not too practical, the next best place is in the liquid line inside the fixture ahead of the expansion valve. He recommended putting a small drier ahead of the expansion valve and a large drier in the liquid line at the compressor.

Marlo Names Hewett

ST. LOUIS—Marlo Coil Co. has announced the appointment of the John B. Hewett Co., Inc., Newark, N. J., as Marlo representative in northern New Jersey.

For more information about products advertised on this page use Information Center, page 26.

M-H 'Safe Start' Circuit for Gas, Oil Burner Controls



——KEY NO. E-730——

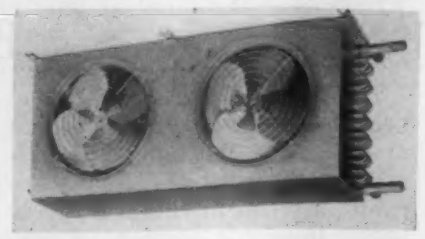
MINNEAPOLIS — Development of a new "safe start" circuit that automatically "proves" the electronic circuitry in gas or oil burner controls is announced by Minneapolis-Honeywell Regulator Co.

The new circuit is incorporated in an electronic "Protectorelay" that is identical in size, appearance, and external wiring to Honeywell's R890 model. Designated the RA890, it features the same speedy electronic flame-sensing, it was pointed out by the company.

The additional circuit, company engineers explain, automatically breaks the relay's starting circuit whenever a false signal of flame is present—either from internal or external causes—following a power failure or manual power interruption.

"This is done by cycling the flame relay after each interruption to 'prove' the vacuum tube circuitry before permitting the burner to start," it was pointed out. "If the flame relay holds during this inspection cycle, the safe-start circuit breaks the starting circuit internally, preventing the flow of fuel into the burner."

To meet code requirements of certain sections of the country, the new unit may also be equipped with an additional relay—designated the R482D—to provide cut-off sequence and system shutdown within 2 to 4 seconds in case of flame failure.



Air Cooled Condensers for 2 to 10-Ton Capacity

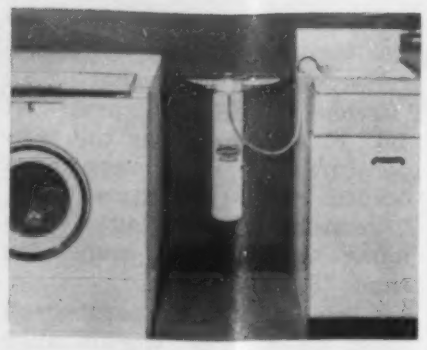
——KEY NO. E-731——

LOS ANGELES—A line of air-cooled condensers in sizes ranging from 2 to 10 tons capacities is currently being manufactured by the A. H. Witt Co. here.

They are designed for single or multiple compressor installation and furnished for outdoor or indoor installation, the company said.

Nominal tonnage is based on 90 F. ambient and 115° F. condensing temperature. Coil cores are fabricated from copper tubing with aluminum fins. They are completely housed in a heavy casing.

The units are designed to require no changes for outdoor or indoor installation, the company further indicated.



Water Softener Designed For Automatic Washers

——KEY NO. E-732——

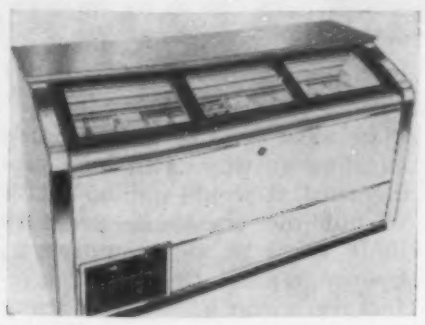
CHICAGO — A new compact home laundry water softener, designed for any automatic washer and which will retail for $79.95, will be distributed nationally by Bendix home laundry distributors and dealers.

The "Laundry Mate" softener is manufactured by the Softmagic Corp. of Whittier, Calif. It has a 5,000-grain capacity, sufficient for approximately 20 loads in a Bendix tumble-action washer in an area with 10 grain hardness, or 10 loads in the average agitator automatic washer.

It is regenerated by the homemaker, who merely fills the self-measuring tube with 3 lbs. of water softener salt.

With simple rubber hose connections, the unit is placed on the hot water line between the heating tank and the automatic washer. Key to its small size (it weighs but 25 lbs.) is the elimination of sand and gravel filter systems. Instead the Softmagic unit employs two filters of sintered brass, the type of material developed for filtering jet aircraft fuel.

Angle-Vision Freezer Doubles as Check-Out Counter



——KEY NO. E-733——

BALLY, Pa.—An angle-vision freezer that can serve as part of a check-out booth or counter has been introduced by Bally Case & Cooler Co. here.

The new freezer measures 72 in. long, 40 in. high, and 30 in. deep. With a storage area of 17 cu. ft., it is intended to give the grocer increased capacity for frozen food products at no sacrifice in counter working space, the company asserted.

Running the length of the case is an 18-in. wide Formica counter top rimmed with stainless steel. Merchandise in the freezer can be seen through multiple glass doors set at an angle. The doors are framed in hard rubber, and slide underneath the counter.

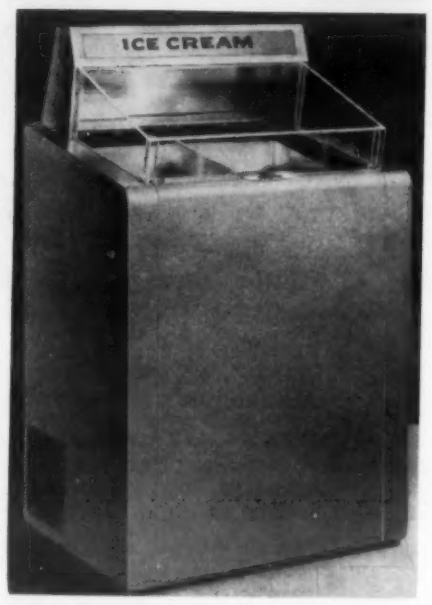
The new unit is completely self-contained, and defrosts automatically. A time clock setting regulates the defrosting cycles, which usually last about 45 minutes. Refrigeration begins automatically as soon as the case has been defrosted.

The new cabinet, called the Bally "Angle Freezer," can be used with its doors closed or open without affecting the temperature of the product or refrigerating efficiency. In either condition, it can be used as a self-service case, the company said.

Completely sealed in the freezer is a capillary tube-controlled ½-hp. compressor. No drains or plumbing are needed since condensate from the coils is self-evaporated. The freezer comes ready to plug in, the company declared.

The case structure is made of welded and rustproofed steel. Entire exterior, except bottom, is covered with acid resistant porcelain said never to peel or turn yellow. Stainless steel trim is used on both the interior and exterior of the case.

The coils are made of copper tubing with closely spaced aluminum fins. A small fan circulates air rapidly across the coils. Fluorescent lamps illuminate the inside of the freezer.



Ice Cream Merchandiser Has 5-Cu. Ft. Capacity

——KEY NO. E-734——

ROYAL OAK, Mich.—A new compact display case for merchandising ice cream specialties has been announced by the National Market Equipment Co. here.

The 5½-cu. ft. case measures 27 in. wide, 30 in. deep, and 51 in. high. An enclosed plexi-glass superstructure provides visual display while preventing pilferage. Customer service is through a rear panel.

Fabricated of heavy-gauge steel and fully insulated, the unit is self-contained and operates on either 110 or 220 volts. Baked enamel finish is available in a wide choice of colors, the company said.

Information Center

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'Micromet Plates' Can Be Hung In Water Spray

——KEY NO. E-735——

PITTSBURGH — A "simplified and inexpensive" way of controlling scale and corrosion in the recirculating cooling water systems of air conditioning, refrigeration, and other cooling equipment is provided by "Micromet Plates," a new product developed by Calgon, Inc., according to the company.

Micromet Plates are described as a new plate form of Micromet —the slowly-soluble phosphate used in granulated form for over 15 years to inhibit scale and corrosion in cooling towers, water heaters, and other water-bearing equipment.

"Up to 10 lbs. of Micromet Plates may be put in a plastic mesh feeding bag, which is hung directly in the water spray inside the cooling tower or the evaporative condenser," it was pointed out. "This eliminates cutting water lines or special plumbing.

"One or two bags of plates are used for each 20 tons of capacity and a single charge will last six months. Micromet Plates are available in 5-lb. cans and 100-lb. drums."

Two other new products developed by Calgon, Inc., for cooling water systems treatment are "Calgon Scale Remover" and "Calgon Algaecide."

"Calgon Scale Remover is an inhibited acid in powder form for removing scale from cooling tower and evaporative condenser systems," the company said. "A built-in pH indicator changes color of water to indicate how much scale remover is needed. It comes in 10-lb. cans and 100-lb. drums.

"Calgon Algaecide is a concentrated dry material compounded in pellet form. Designed to stop algae and slime bacteria growth, it is sold in 2-lb. cans."

Thermometer Held by Magnet To Refrigerator

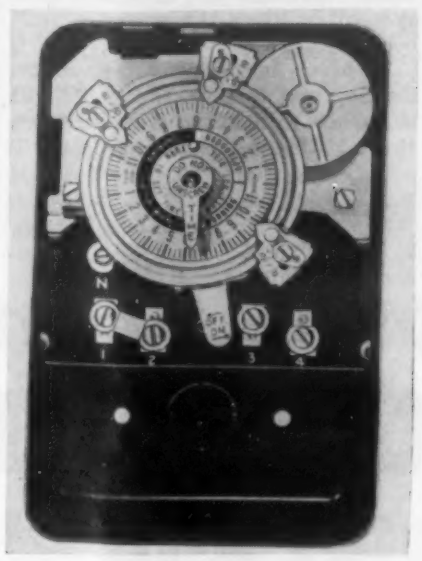
——KEY NO. E-737——

HIGHLAND PARK, Ill. — For use in refrigerators and freezers, a thermometer equipped with an "Automagnet" clip that holds firmly to any metal surface has been introduced by Park Magnets.

The "Zero-Zone" thermometer, the company says, can be positioned at any convenient reading point away from the shelves. It is mounted on an easy-to-read scale and enclosed in a glass tube.

Zero-Zone is available at $1.

Improved Timer Introduced for Commercial Use



——KEY NO. E-738——

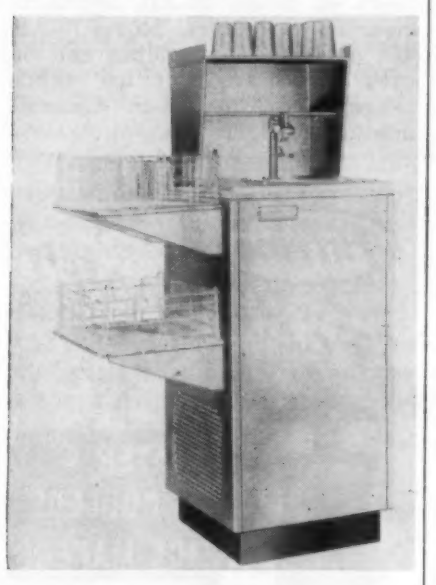
CHICAGO — Improvements resulting in more accurate timings and a minimum variation in defrost time cycles have been designed into the "Intermatic" T670 series time switch for automatic defrosting of commercial refrigeration units, International Register Co. announced recently.

The series T670 permits as many as 14 different defrost cycles a day on one dial. Each cycle is individually adjustable for timings from 5 to 60 minutes.

This switch is available in 125 or 250-volt models and can be used as three different switches: single pole, single throw with contacts normally closed; single pole, single throw with contacts normally open; or a single pole, double throw with alternating contacts.

Other features include "snap-out" mechanism; permanently sealed, synchronous type timing motor; front mounted motor with observation window; and black on yellow dial for visibility.

Intermatic time switches are housed in a drawn steel case measuring 7¾ in. high, 5 in. wide, and 3 in. deep.



Drinking Water Cooler Cools Incoming Water

——KEY NO. E-736——

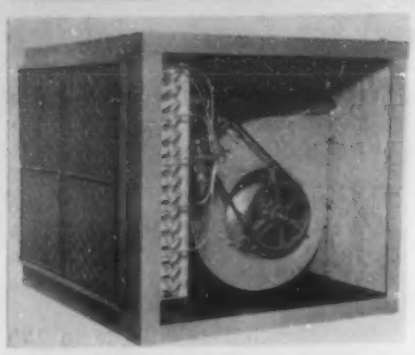
PUNXSUTAWNEY, Pa. — Designed to cool incoming water so as to get the maximum capacity and efficiency out of the refrigeration equipment, a new line of "Beverage-Air" drinking water coolers has been announced by the Punxsutawney Co. here.

Cold water is stored in a large tank for peak load requirements. It is kept at 40° F. or according to the temperature setting, the company said.

The new line includes 32 models in industrial and restaurant types with bubblers or glass fillers optional. Top and receptor bowls are stainless steel with sides in baked enamel or stainless steel. Stainless steel top shelves or adjustable side shelves on brackets are available.

The coolers are equipped with a safety control to prevent freezing. An adjustable control regulates water temperature. Controls, plumbing connections, and the entire refrigeration system are accessible without interrupting operation of the cooler.

Coolers are designed to meet all city sanitary codes as well as government specification 00-C-566C. Capacities range from 20 to 110 gals. per hour. Suggested selling prices start at $520.



System Designed for Commercial, Home Use

——KEY NO. E-739——

BROOKLYN—Typhoon Air Conditioning Co., Inc. is offering a new combination air-cooled system for both residential and commercial uses.

In this system, the company's 8ACCU remote air-cooled condensing unit is coupled with its 8LSU low side air-handling unit. The units are available in a number of matched capacities—2, 3, 5, 8, and 10 tons.

The company said the new Typhoon "team" provides the benefits of air-cooled equipment without sacrifice of valuable floor space.

"The air-cooled condensing unit may be placed anywhere outside the conditioned area—in basements, yards, or on roofs," it was pointed out. The air-handling unit, suspended from wall or ceiling, circulates refreshing, comfort-cooled air with virtually no noise or vibration."

The 8ACCU features "rugged oversized parts and a generous use of copper," Typhoon said, adding: "an unusually large amount of evaporator surface guarantees efficient cooling even under extreme conditions.

"As the high side of Typhoon's 'Convert-to-Cool' residential add-on system, the Typhoon ACCU has proven its worth in the field in a multiplicity of installations.

"The 8LSU performs the functions of cooling, filtering, dehumidifying, and circulating air throughout the conditioned area either through an attached duct system or 'free-throw' as a unit cooler.

"Where hot water or steam heating are present, the 8LSU will serve as a heating unit through the addition of a heating coil."

Four-In-One 'Scotsman Super Bar' Is Portable

——KEY NO. E-7310——

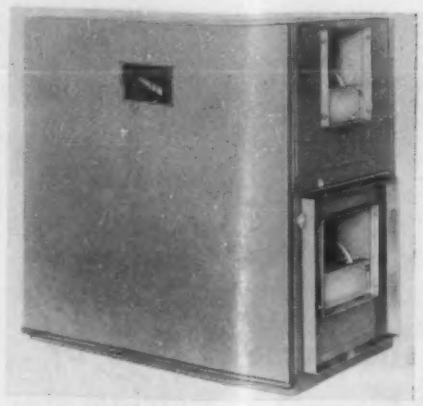
ALBERT LEA, Minn.—A portable four-in-one "Scotsman Super Bar" which manufactures ice cubes; provides dry cold storage for beverages; dehumidifies room air, and stores liquor in a large, locked compartment has been introduced by the American Gas Machine Co.

Freezer is said to make 108 ice cubes every two hours. Quik-Release trays provide easy handling of cubes.

Stainless steel storage compartment cools four cases of beer, pop, or mix. Cooler doors slide open and are stored under bar top when refilling cooler.

Locked liquor storage drawer holds 1½ cases of fifth-size bottles. Same space contains drawer for bar accessories.

The Super Bar is available in two models: model S-IDH with dehumidifier and model S-1 without dehumidifier.



Coil Condensate Ups Condenser Capacity

——KEY NO. E-7311——

KINGSPORT, Tenn.—A new 1½-ton residential air conditioner in which the condenser coil is placed below the cooling coil so that condensate from the cooling coil will drip over the condenser to increase its capacity was announced here recently by Sunwarm, Inc.

F. T. Walsh, president of Sunwarm, claims that wetting the air-cooled condenser in this way adds about 12 to 15% efficiency on extremely hot days when added capacity is needed most.

Five different combination inlet and outlet locations for evaporator air are possible. This is claimed to reduce the amount of sheet metal work required and to allow dealers to make up any combination from one basic model.

Sunwarm's model SAC-3 can be purchased with or without the Sunwarm zone selector, which divides the house into two separate zones and air conditions either at the flip of a switch.

This model carries a one-year replacement guarantee on any defective part and a five-year warranty on the entire refrigerant circuit.

"Freon-12" is the refrigerant. A built-in safety control system is employed.

Penguin Has New Conditioners and Cabinets

Penguin wall display case.

——KEY NO. E-7312——

LIVONIA, Mich.—A completely new series of refrigerated display and storage cabinets and air conditioning units has been announced by Penguin Corp. president, A. E. Welch.

The new products include two wall cases, a display merchandising cabinet, two aisle display cabinets, a dairy products merchandiser, two air conditioning units, and two room air conditioner models. One of the latter is portable, being mounted on casters, and the other has a cooler on top for storage of bar material.

Two all-steel, sliding-door refrigerated wall cases for beverages, dairy foods, or flowers lead the new Penguin cabinet line.

Fully self-contained, model UG-40-S has a capacity of 40 cu. ft., measures 76 in. high, 30 in. deep, and 55 in. wide. Eight adjustable shelf sections are cooled by a ⅓-hp. condenser unit. A ½-hp. condenser is available at extra cost for special applications.

Model UG-70-S, a larger version of the 40-cu. ft. unit, has a capacity of 70 cu. ft.

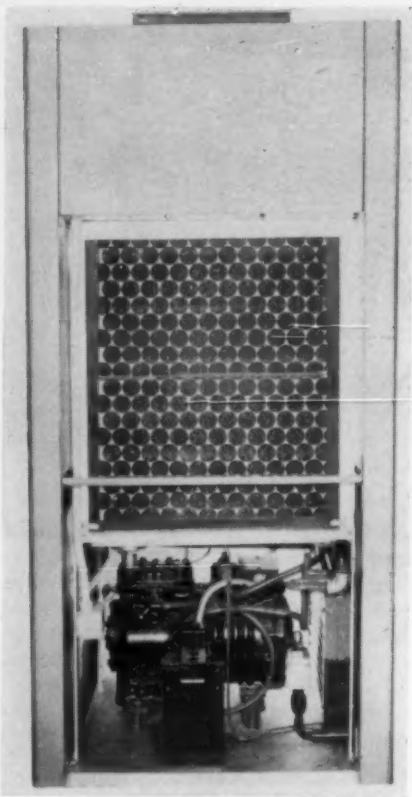
"Positive, efficient" automatic defrosting is the feature of model G-5800-GW display merchandising cabinet, according to the company. The cabinet is available with either electric or hot-gas self-defrosting units.

Holding over 750 packages of frozen foods in its 16-cu. ft. storage space, the G-5800-GW is of welded-steel construction.

Models 5400-GA and 5800-GA aisle display cabinets are also available with automatic defrosting, or a plate-type freezer, and either glass or solid front panels.

Also having a 37-in. serving height is model 5800-DW dairy products merchandiser, incorporating three sets of price tag mouldings. The 27-in. bottom shelf and 17-in. second shelf are both refrigerated for their full 77-in. length. Additional display shelf area (not refrigerated) is provided by 10-in. wide center shelf and 16-in. top display shelf. Refrigeration unit is a ¾-hp. Copeland.

In the air conditioning field Penguin offers two units: model 300-W, with a 3-hp. Copeland compressor, and model 500-CW, which employs a 5-hp. Copeland.



Penguin air conditioner.

Models 75-AB and 75-AH room air conditioners round out the new Penguin series. Circulation capacity of Penguin room air conditioners is given as 300 c.f.m. Cooling is by a ¾-hp. Copeland compressor. A feature of these room air conditioners is the portability of model 75-AH, which is mounted on casters. Model 75-AB has a cooler on top that can be used for storage of ice, drink mixes, and other bar material needing refrigeration.

For more information about products advertised on this page use Information Center, page 26.

HOME-MADE SLIDING DOOR composed entirely of Fiberglas filters does a good job of keeping airborne dirt out of the paint spray booth, says Ed Dargis, shop foreman for Southtown Refrigeration Corp. in Chicago. The booth is actually a separate room built for the purpose in the extensive service shop operated by Southtown. The company handles Frigidaire service, primarily, on Chicago's south side and southern suburbs.

Highside Changes Name To Stewart Industries; Gardner In Top Post

CLIFTON, N. J. — Highside Chemicals Co. has become a corporation and changed its name to Stewart Industries, Inc. effective July 1.

The firm will remain at the same address and operate under the same management and ownership.

Laurence V. Gardner, general manager for the past 17 years, will continue in that capacity as executive vice president of the corporation, the firm further indicated.

Dole Names A. J. Lane And Robert H. Tafel

CHICAGO — Dole Refrigerating Co. has announced the appointment of A. J. Lane as district manager, Atlantic central area, and Robert H. Tafel to the sales staff at its Chicago headquarters.

A. J. Lane

R. H. Tafel

A veteran of 20 years in the refrigeration field, Lane was formerly with Walker-Martin, Inc., which is in Raleigh, N. C.

He is a member of three RSES chapters and was recently re-elected to the presidency of the Southern Regional Association.

Tafel was formerly with Col-Flake Corp., Chicago. Before that, he was with Peerless of America for five years. Tafel, who holds a state teacher's certificate for refrigeration and air conditioning, recently resigned from the Greer Training School where he taught applications engineering, according to the announcement by Dole.

'Corrocote No. 362' Protects Against Moisture, Oil, Salt

BROOMALL, Pa. — Development of a neoprene base protective coating that is said to guard surfaces of many materials against moisture, oils, chemical fumes and splash, salt air, and fungus corrosion has been announced by Chemical Coatings & Engineering Co. here.

Applied by roller, brush, spray, or dip, the coating—designated "Corrocote #362"—dries quickly and self-vulcanizes to form a firm rubbery barrier, according to the company.

"The natural toughness and elasticity of the Corrocote film eliminates failures caused by expansion, contraction, and mechanical vibration," the company said. "The cured film resists abrasion, will not support combustion, resists sunlight and weather, is a non-conductor, and effectively counteracts electrolytic corrosion.

"It has good adhesion to metal, concrete, wood, and fabric.

Coatings can be exposed to continuous air temperatures up to 250° F. and intermittently to 300° F."

The coating is available in gray, black, aluminum, and red. Applications include exteriors of pipes, tanks, vats, ducts, structural steel; use on power transmission shafts, valve parts, bushings, air conditioning and ventilating equipment; and lining for fans, impellers, and ducts, among others.

Plastics Show Set for New York June 11 to 15

NEW YORK CITY — The Seventh National Plastics Exposition will be held June 11-15, 1956, at the new Coliseum in New York City, it has been announced by The Society of the Plastics Industry, Inc. A conference on plastics will be held at the same time.

Wolverine Opens Mill Depot In Detroit

DETROIT — An open house for Wolverine Tube customers heralded the opening of new mill depot facilities and a branch office of the east central sales district, according to J. H. Smith, east central district sales manager for Wolverine Tube, Div. of Calumet & Hecla, Inc.

The new mill depot, located at 8941 Schaefer highway in Detroit, will now offer better service to customers in northern Indiana and Ohio and Michigan's lower peninsula.

Delavan Names Jaramillo

WEST DES MOINES, Iowa—Delavan Mfg. Co. here has announced the appointment of E. Vernon Jaramillo as a project engineer.

Jaramillo is a graduate of Iowa State college and will specialize in design and improvement of liquid atomizing nozzles.

Refrigeration Problems
And Their Solution

By Paul Reed

For Service and Installation Engineers

Service Trouble on 'F-22' vs. 'F-12' (6)

OIL DECOMPOSITION

In the preceding instalment, we said that acids are formed by the chemical reaction between water in the system and by the decomposition of the compressor oil.

Chemists could, but this writer would not attempt to explain what happens in the decomposition of oil nor its reactions with the refrigerant and water, for some very complex processes are involved. In addition to acid, carbon is produced by oil decomposition, and it is the basis of the heavy black sludges that are characteristic of oil breakdown.

Apparently temperature is a very important, perhaps the most important, factor in oil breakdown, and there "Freon-22" (or "Genetron-141") is at a very decided disadvantage.

Other conditions being equal, the discharge temperature for "Freon-22" is much higher than for "Freon-12." It is the failure to take this into consideration that is the main reason for the oil decomposition, heavy black sludge, and motor trouble, that are often associated with the use of "Freon-22."

One of the leading manufacturers of compressor oil gives 275° F. as the maximum temperature to which their oil should be subjected in the system in order to avoid oil breakdown. Many manufacturers of refrigerating equipment believe that 275° F. is too high. Some give 240° F. as the maximum allowable temperature, and some set the maximum as low as about 215° F.

Ordinarily, the hottest place in the compression refrigeration system is the gas passing through the discharge valves and in the compressor head just beyond the discharge valves. There, the gas has in it all of the heat removed from the evaporator, the heat picked up in the suction line, and the heat of compression which is caused by the work done on it by the motor in compressing the gas.

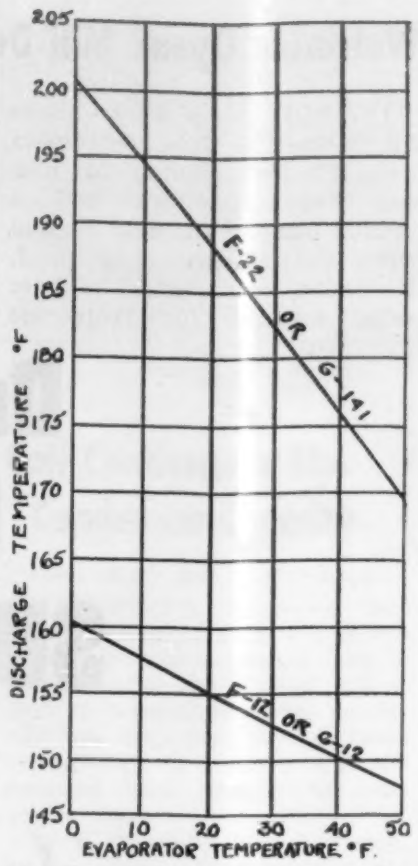


FIG. 3—Curves showing that discharge temperatures fall as evaporator temperatures (and pressures) rise. These curves based on a condensing temperature of 110° F. and a suction superheat of 30° F.

FACTORS IN DISCHARGE TEMPERATURES

There are five main operating conditions that determine the temperature of the discharge gas:

1. The evaporator temperature. For any certain condensing temperature and pressure, the discharge temperature will be higher, the lower the evaporator temperature. A low evaporator temperature means a low suction pressure, so more work must be done on the gas to compress it to the condensing pressure, than if the evaporator temperature (and pressure) is high.

Fig. 3 shows two curves, one for "Freon-12" and one for "Freon-22." This chart is based on a condensing temperature of 110° F., and on the suction gas superheated 30° F. between the evaporator and the suction service valve. These curves show the discharge temperatures for various evaporator temperatures. We see that as the evaporator temperatures rise, the discharge temperatures fall.

2. Condensing temperatures. As condensing temperatures rise, head pressures rise also. For the same evaporator temperatures, more work must be done on the gas to compress it to the higher pressure; therefore it is heated more, so its discharge temperatures rise.

Fig. 4 shows two curves similar to Fig. 3, but with a constant evaporator temperature and suction line superheat of 30° F. This shows the discharge temperatures rising as condensing temperatures rise.

3. Suction line superheat. If the evaporator and condensing temperatures remain the same, the discharge temperatures rise as the suction line superheat increases.

In Fig. 5, the condensing and evaporator temperatures are constant, 110° F. and 20° F., respectively; but the suction line superheat varies from 0° F. (no superheat, suction gas to the compressor at 20° F.) to 40° F. (suction gas to the compressor at 60° F.). This shows that the discharge temperatures rise as the suction line superheat increases.

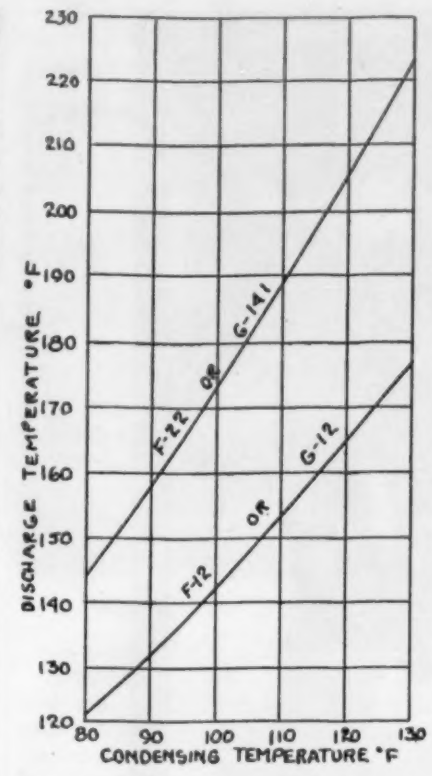


FIG. 4—Curves showing that discharge temperatures rise as condensing temperatures (and pressures) rise. These curves based on an evaporator temperature of 20° F. and a suction superheat of 30° F.

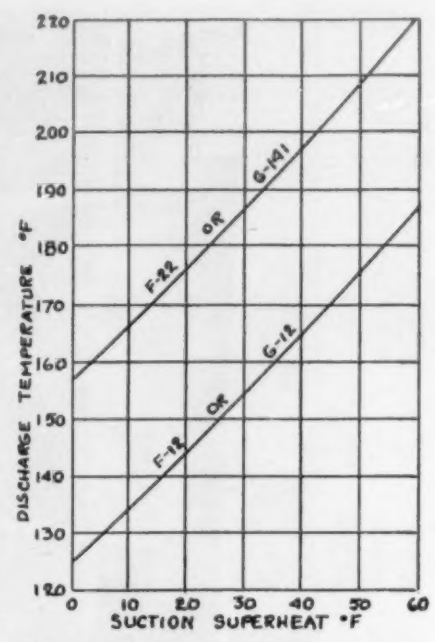


FIG. 5—Curves showing that discharge temperatures rise as suction superheat rises. These curves based on a condensing temperature of 110° F. and an evaporator temperature of 20° F.

4. Compressor temperature. This depends principally on (a) how heavily the compressor motor is loaded in relation to the load for which it was designed, (b) how well it was designed in respect to removing the heat from the stator winding and dissipating it through the motor-compressor case, and (c) on how well the motor-compressor is ventilated in order to carry away the heat from the motor-compressor.

Overloading is not uncommon. The fixture manufacturer or the man in the field may be trying to squeeze a little too much capacity out of a compressor. Perhaps he should have used the next larger size, or perhaps he is using a low temperature motor-compressor on an application operating on a higher suction pressure than the motor-compressor was intended for.

There is some difference in motor-compressor design. Some motor-compressor cases are finned, or large case area is provided, to more easily dissipate the motor heat. In some designs, the motor-compressor in-

(Continued on next page)

For more information about products advertised on this page use Information Center, page 26.

Service Trouble on 'F-12' vs. 'F-22'--

(Continued from preceding page)

side the case is mounted on springs; and it is difficult for the stator to transmit its heat to the case through these springs only. In other designs the stator is pressed into and therefore in better thermal contact with the case and so cools more readily.

It must be remembered, too, that because of the lower displacement per horsepower of "Freon-22" compressors, it is possible to build them physically smaller than "Freon-12" compressors. This reduces the cooling area, and adds to the difficulty of cooling the "Freon-22" motor-compressor.

5. The refrigerant itself. From an inspection of Figs. 3, 4, and 5, it will be obvious that higher discharge temperatures are inherent in "Freon-22" as compared to "Freon-12."

COOLING THE MOTOR-COMPRESSOR

Cooling a refrigerating machine is not merely a matter of condensing refrigerant in the condenser. Even on condensing units provided with water-cooled condensers, some provision must be made for carrying away the heat from the motor and compressor, whether they are separate as in belt-driven compressors, or together as hermetic motor-compressors.

On some of the larger self-contained, water-cooled units, a separate finned water coil is provided, the motor may have a water jacket, or a few turns of water tubing is passed around the motor housing.

In recent years, some of the hermetic motor-compressors are equipped with refrigerant fed coils in the oil in the crankcase.

In most fixtures, such as freezers, if a condenser fan is supplied to blow air over the air-cooled condenser, it also creates enough air movement over the motor-compressor to adequately cool it.

THE STATIC CONDENSER

In late years, the static condenser has become very popular. It may be in the form of an ordinary finned, air-cooled condenser, consisting of tubes soldered or clamped to metal plates, or tube coils wound with many turns of wire to form the secondary surface.

The manufacturer may use either a static condenser of the plate type, that tends to form its own flue, or if he uses a coil with small fins or wire, he provides a flue in the rear of the cabinet. In either case, the flue effect induces an upward flow of air to provide sufficient ventilation not only for the condenser, but also to cool the motor-compressor in the bottom or in the back of the cabinet.

If these condensers get fouled with dust or lint, not only will the head pressure and condensing temperature rise, but the reduction of air movement may be enough to cause the motor-compressor to overheat. In either case, the result is increased discharge temperature of the gas, contributing to oil breakdown, sludges, and deterioration of the winding on the motor stator.

Because of the inherently higher discharge temperatures with "Freon-22," equipment using static condensers with "Freon-22" are more vulnerable to overheating.

CABINET SHELL AS CONDENSER SURFACE

Another form of static condenser is made by attaching the condenser coil to the inside surface of the shell of the refrigerator or freezer cabinet, between the shell and the insulation. The cabinet shell becomes the secondary surface of the condenser. This type has the advantage that the cabinet shell is warmed by the hot refrigerant and thus prevents any tendency for the outside of the cabinet to sweat.

This is very helpful on low temperature cabinets such as freezers or ice cream cabinets, and particularly in very humid climates or on very humid days in areas that may ordinarily experience little difficulty with cabinet sweating.

With this type of construction, there is usually no natural draft or flue action, so the tendency is for the motor-compressor to get very hot, for there is no positive ventilation over it.

Some manufacturers using the cabinet shell type condenser find that on fixtures using motor-compressors ¼ hp. and larger, they have difficulty keeping the motor-compressor cool, particularly with "Freon-22." Below ¼ hp., they are able to dissipate the smaller amount of heat.

One freezer manufacturer who uses the cabinet shell as condenser surface uses "Freon-22" on his freezers under ¼ hp., and "Freon-12" on his freezers ¼ hp. and larger.

Perhaps this is the reason you are having more motor-compressor trouble on the larger freezers than on the smaller. Possibly on the make of freezer you handle, there is not enough ventilation through the unit compartment to cool the motor-compressor.

Or just possibly, you are installing these larger jobs in places where they cannot adequately ventilate themselves. At any rate, you should investigate the possibility of getting better ventilation over the motor-compressors and perhaps over the condenser as well.

(To Be Continued)

Viking Air Conditioning Promotes J. G. Baker

CLEVELAND—John E. Harris, manager of engineering for Viking Air Conditioning Div., National U.S.-Radiator Co., announces the appointment of J. G. (Gary) Baker to the newly-created post of manager of application engineering. Baker has been assistant chief engineer for the past five years.

As head of application engineering, Baker will assist manufacturers of heating and cooling units with their problems involving the application of blowers, humidifiers, and similar devices.

Cool Courthouse Annex

MOULTON, Ala.—Open house for the public was held recently for inspection of the new three-story Lawrence County Courthouse annex, which is completely air conditioned.

Minneapolis-Honeywell Appoints S. M. Ramsey

MINNEAPOLIS—Stephen M. Ramsey has been appointed to the newly-created post of branch manager of Minneapolis-Honeywell Regulator Co.'s sales and service office in Miami, Fla.

Ramsey has been manager of the firm's Columbus, Ohio branch since 1950. He will be succeeded there by Robert R. Moore, a heating controls sales engineer in Columbus since 1951.

Connor Names McKellar

DANBURY, Conn. — Robert R. McKellar has been appointed New York district sales manager of Connor Engineering Corp. He was formerly with J. O. Ross Engineering Corp. as sales engineer for the New Jersey and New York state territories.

Servicing Automobile Air Conditioners

BY C. DALE MERICLE

With this instalment we begin a discussion of another make of automobile air conditioner—manufactured by Automotive Air Conditioning, Inc. of Oklahoma City.

Previous makes featured were those of A.R.A. Mfg. Co., in the issues of June 13, 20, and 27, and Frigikar Corp. in the issues of July 4 and 11.

Numerous other makes will be described in future issues to give the independent serviceman as much help as possible in cashing in on this booming new application of air conditioning.

Frigiquip, Frigette-1

Automotive Air Conditioning, Inc.
3724 N. May Ave.
Oklahoma City, Okla.

DESCRIPTION

The Frigiquip automobile air conditioner manufactured by Automotive Air Conditioning, Inc., follows the conventional arrangement of having the compressor in the engine compartment belt-driven by the car's engine, the condenser in front of the car radiator, and the evaporator-blower assembly in the rear luggage compartment.

It is rated by the company at 36,000 B.t.u. Its design permits installation in recent models of most American make cars.

Frigette units, introduced in 1955, are "front-end" type systems, with the evaporator-blower assembly being installed beneath the car or truck dash. The Frigette system is rated at 24,000 B.t.u.

Refrigerant employed in both models is "Freon-12." Standard charge for the large Frigiquip system is 6 lbs. Charge in Frigette units is 2 lbs.

Compressor

The Frigiquip system employs the Lehigh E-57A automotive compressor, which is of 4-cylinder, V-type design. (See Fig. 1). The Lehigh V-93 compressor is used for Frigette units.

Suction service valve of the E-57 compressor is located at rear of compressor opposite flywheel end, and the discharge service valve is on the left cylinder bank, as viewed from the flywheel end.

On the V-93 compressor, the suction service valve is on top of the compressor, and the discharge service valve is at the end opposite the flywheel.

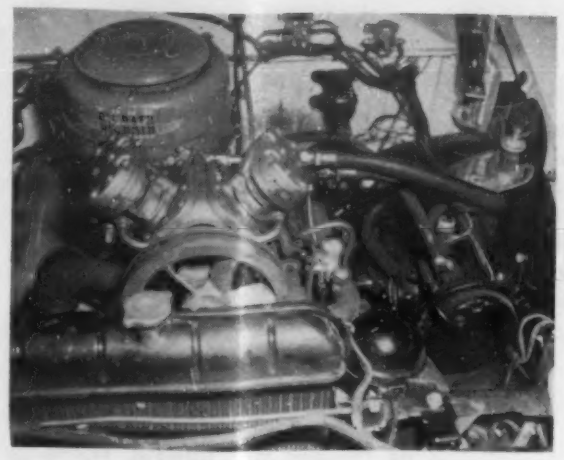


FIG. 1 shows Lehigh E-57 compressor as installed on Frigiquip system.

Condenser

Condenser of both Frigiquip and Frigette systems is installed in front of the car radiator. A slightly larger condenser, in terms of capacity, is used on Frigiquip as compared with the Frigette unit.

On Frigiquip models the liquid receiver and drier, connected together, are located about three-fourths of the way back of the car on the same side as the compressor. They are attached to the inside of the car frame.

Receiver and drier for Frigette units are mounted on firewall in the engine compartment.

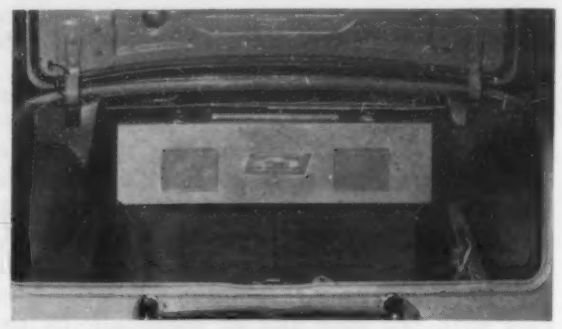


FIG. 2—Two access panels are provided in 1955 model of Frigiquip evaporator-blower assembly. In previous models entire front panel was removable.

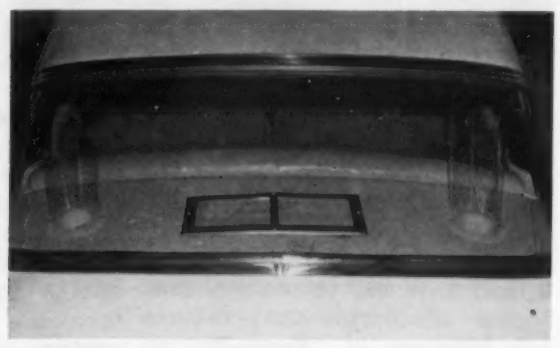


FIG. 3 shows two discharge air outlets and return air intake installed on parcel shelf in this Frigiquip installation.

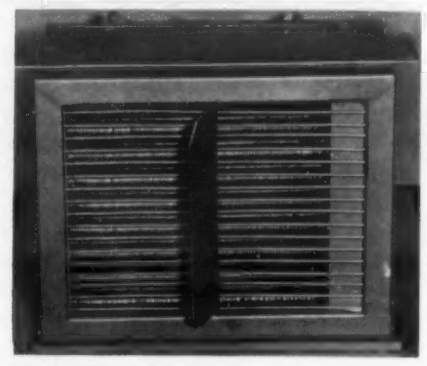


FIG. 4—This is type of evaporator-blower assembly employed for the Frigette "front-end" installation. Case mounts beneath instrument panel.

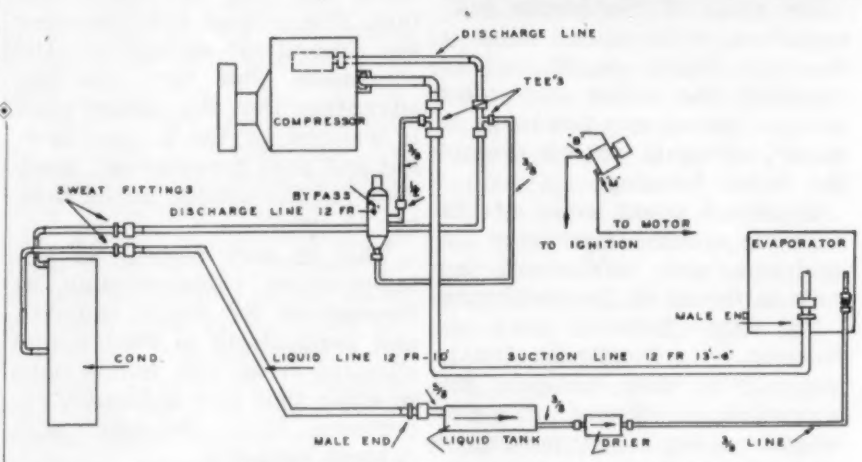


FIG. 5—Refrigerant piping is indicated in this schematic of Frigiquip system. Hookup of components in Frigette "front-end" system is essentially the same.

Evaporator

Frigiquip evaporator case assembly is located on the forward ledge of the trunk or luggage compartment. (See Fig. 2). Equipped with access doors, this case assembly houses the coil, expansion valve, and two blowers.

Flexible ducts 4 in. in diameter run from the top of the evaporator case on each side to air outlets in the parcel shelf directly above (See Fig. 3).

Return air is brought from the car interior to the evaporator case through a fabric duct running from the center of the parcel shelf to the unit.

A Detroit 673 thermostatic expansion valve is used in the Frigiquip system. This is mounted on top of the coil and is accessible for adjustment by removing the return air grille on the parcel shelf.

This arrangement permits adjustments to be made to the valve from inside the car while the car is in motion.

Blower motors are mounted on a circular plate fastened to the evaporator case by three sheet metal screws. Motors are easily removed with a stubby screw driver.

Evaporator-blower assembly of Frigette units, which mounts beneath the car instrument panel, houses the evaporator coil, a single blower, and the expansion valve. (See Fig. 4).

A Detroit 777 expansion valve is employed on the Frigette unit.

Controls

Operation of the two blower motors in Frigiquip units is controlled entirely by two switches mounted on a switch plate installed below the car instrument panel. Right-hand switch controls the right-hand fan motor; left-hand switch, the left-hand motor.

When no cooling effect is desired in the car, both fan motors are turned off.

A single, three-speed fan is used on Frigette air conditioners.

Limiting device to prevent excessive cooling and icing up of coil at high speeds is a suction-operated by-pass valve. This is used on both Frigiquip and Frigette.

Located in the car engine compartment beside or close to the compressor, this by-pass valve, a Detroit 669, is connected into a by-pass between

(Continued on next page)

For more information about products advertised on this page use Information Center, page 26.

Servicing Car Coolers--

(Continued from preceding page)
the hot gas discharge line and suction line. (See Fig. 5 on preceding page).

A short length of flexible hose runs from a tee in the discharge line into the bottom port of the by-pass valve. Another short length of hose runs from the outlet port of the by-pass valve to a tee in the suction line.

An adjustment screw on top of the by-pass valve permits changing the setting of the valve.

Normally this by-pass valve is set for a minimum suction pressure of about 16 to 18 p.s.i.g. When the suction pressure falls below that point, the by-pass valve opens. This permits hot gas from the compressor to go through the valve, bypassing the condenser and stopping refrigerating effect at the coil by raising the suction pressure.

Upon a rise in suction pressure, the by-pass valve closes and normal refrigeration resumes.

Refrigerant Lines

Flexible refrigerant hose is used throughout the entire system to minimize the effects of vibration. The lines are fastened directly to the car frame or body by circular clamps or banding straps. A periodic inspection should be made of the lines to make sure that they are securely fastened in order to prevent dragging or chafing.

(To Be Continued)

Room Cooler Sales--

(Concluded from Page 1, Col. 5)
certain models at the end of the week of July 4.

How fast was the public buying of room air conditioners during the week of July 4? Well, the Vim Electric Co., appliance chain which operates 59 stores in the New York metropolitan area, sold out half its inventory of room air conditioners in two days.

As reported in the July 11 issue of the NEWS, some sales were lost because dealers did not have access to installation personnel that could get the units installed in a reasonable time.

The *New York Times* stated that prospective buyers "stood united in one thing—a uniform demand that the room air conditioners be delivered immediately."

Airtemp Air-Cooled Unit Sales Rise 101%

DAYTON—A 101% increase in the sale of Chrysler Airtemp air-cooled air conditioners has been disclosed by J. F. Knoff, Airtemp vice president in charge of sales.

The increase covers sales figures for the first eight months of fiscal 1955, as compared to the same period for 1954, according to the company.

Knoff also announced that for the same period Airtemp gas and oil furnace sales were up 27.7%.

Auto Air Conditioner Sales Volume--

(Concluded from Page 1, Col. 5)
conditioned cars for the first five months of the year trebling the same period in 1954. Where 1,441 units were sold through May last year, 4,305 were sold this year.

Cadillac Div. would not release any figures, but a spokesman said sales of air conditioned automobiles were much greater than last year. He noted that big demand came from the southwest, with California and the southern states following behind.

Ray Abernethy, sales vice president for the Nash Div., American Motors Corp., declared Nash's air conditioner installation rate is double last year. Approximately 10% of Nash models are air conditioned this year as compared with 5.4% last year.

From Oct. 1 through June 30, 5,442 Nash cars were air conditioned. For the same period, 2,345 Hudson models were equipped with cooling apparatus.

Abernethy cited an "independent survey" that indicated that 1.5% of all cars will be air conditioned this year as compared with .8% last year.

Chrysler Corp. reported that 8,850 air conditioning units have been installed on all its cars in the first six months of this year as compared with 2,300 units on all cars in the first half of 1954.

This year, 5,446 air conditioners were put on Chrysler and "Imperial" models. Total scheduled installations for model year is 7,553 as against 2,505 last year.

In 1954, Chrysler spokesmen pointed out, Dodge and DeSoto were just getting into air conditioning and Plymouth had none at all. So far this year, he said, aid conditioned DeSotos have increased four fold, and Dodges three fold. On Plymouths, 850 air conditioners have been installed.

A Chrysler Div. spokesman told the NEWS that 40% of the "Crown Imperial" models are equipped with air conditioners. So are 23% of the "Imperials."

Lincoln-Mercury Div. of Ford Motor Co. revealed that 9.1% of the Lincolns produced for the year through June 30 were air conditioned, which is "a little higher" than last year. One per cent of Mercury models are provided with air conditioners. This is the first year Mercury has offered cooling as an accessory.

Packard reported that sales of air conditioned automobiles had increased about 20% over last year. About 6% of all Packard and "Clipper" models were air conditioned at the factory.

Studebaker did not have an air conditioner last year. But 1.2% of production this year is being supplied with cooling units.

Wm. Conley Resigns Post with Norge

CHICAGO — William Conley has announced his resignation as director of products for Norge Div. of Borg-Warner Corp., effective immediately.

W. C. Conley

Conley said that he had no immediate job plans but expects to do some traveling.

Before joining Norge, Conley had held executive sales positions with the Crosley & Bendix Home Appliance Divs. of Avco, and with Coolerator Corp. He also operated a distributorship in North Carolina, and has been with the merchandising divisions of utility companies.

Kelvinator Sales Rise 69% During Second Quarter

DETROIT — Kelvinator compiled one of its best sales records in recent history during the quarter ended June 30, according to Walter Jeffrey, vice president in charge of sales.

Jeffrey said factory sales of all appliances were 69% greater than the same quarter a year ago, representing the second highest quarterly total since the Korean War buying wave.

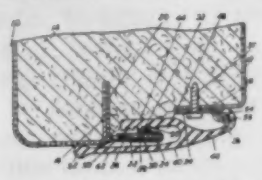
For the nine months of the fiscal year to date, he said, factory shipments are 33% ahead of the first nine months of last year, and have already surpassed shipments for all 1954.

Jeffrey said refrigerator sales, traditionally tops in the Kelvinator line, led in total volume and showed a 76% increase over the same quarter a year ago. Ranges were up 84%, laundry equipment 65%, and freezers 59%.

"Kelvinator inventories are significantly below last year," Jeffrey said, "indicating that the intensified movement of Kelvinator appliances is continuing on to the ultimate consumer, also at a pace well in advance of a year ago."

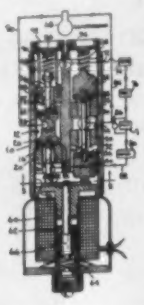
Week of May 17 (Concluded)

2,706,529. REFRIGERATOR CABINET BREAKER STRIP. Arthur Valentine Lander, Brookshill, Harrow Weald, and Louis W. Gomm, Kenton, Middlesex, England, and Nelson J. Smith, Neuilly (Seine), France, assignors to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application March 9, 1953, Serial No. 341,292. 4 Claims. (Cl. 220—9.)



4. A refrigerator cabinet having a compartment provided with an access opening, said cabinet including spaced apart inner and outer shell-like wall members having insulating material disposed in the space therebetween, a door for said compartment access opening, said wall members having spaced edge portions in the vicinity of said compartment access opening, a resilient non-metallic breaker strip bridging the space between said edge portions of said wall members, a metal spring clip secured to the edge portion of one of said wall members, said spring clip being provided with a tongue projecting therefrom, the end of said tongue substantially facing said one wall member and being directed away from the other of said wall members, one edge of said breaker strip being provided with inner and outer overlapping flaps forming a channel therebetween, the inner surface of said inner flap having a plurality of spaced parallel serrations therein extending longitudinally along the length of said resilient breaker strip, said inner and outer overlapping flaps of said breaker strip being slid over the edge portion of said one wall member to position said spring clip in the channel between said flaps on said breaker strip, said tongue on said spring clip being slidable over certain of said plurality of serrations and fitting into certain other of said serrations on said breaker strip to lock said strip to the edge portion of said one cabinet wall member, the other edge of said breaker strip being curled over to provide a hook therealong, means for receiving said hook and anchoring the same to the edge portion of the other of said cabinet wall members, and the end of said outer flap on said resilient breaker strip having an enlarged bulbous part formed thereon engaging said one cabinet wall member and providing a sealing bead along said one edge of said strip adapted to be engaged by said compartment access opening closing door.

2,706,561. FOUR-WAY VALVE. Edward C. Ehlke, Milwaukee, Wis., assignor to AP Controls Corp., Milwaukee, Wis., a corporation of Wisconsin. Application Feb. 18, 1952, Serial No. 272,051. 10 Claims. (Cl. 251—129.)

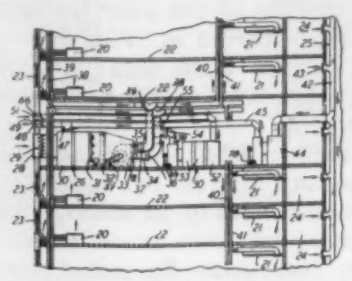


1. A four-way valve comprising, a casing having an inlet chamber and an outlet chamber, each chamber having aligned orifices, an inlet conduit connected to the inlet chamber and adapted to receive high pressure fluid, an outlet conduit connected to the outlet chamber and adapted to be connected to a suction line, a first manifold chamber communicating with the inlet and outlet chambers by means of one of the orifices in each chamber, a second manifold chamber communicating with the inlet and outlet chambers by means of the other of the orifices in each chamber, a valve stem passing through the aligned orifices in the inlet chamber, a pair of valves mounted on said stem within said inlet chamber with their faces disposed in opposite directions and spaced to close off one of the orifices at a time, another valve stem passing through the aligned valve orifices in the outlet chamber, a pair of valves mounted on said other stem each within a manifold chamber with their faces disposed toward each other and spaced to close off one of the orifices at a time, the said faces of said valves being non-metallic to allow the face to conform to its seat, a conduit connection in each of the manifold chambers and adapted for connection to apparatus through which fluid may flow in either direction, means sealed with respect to said casing and operably connected to said stems to actuate the stems in the same direction, said valves serving to direct flow from the inlet to one of the manifold chambers and from the other of the manifold chambers to said outlet and the pressure differential across the valves tending to hold the valves on their seats.

2,706,563. HERMETICALLY SEALED PACKINGLESS IN-LINE VALVE. William O. Backman, Fair Oaks, and Don M. Redmon, San Francisco, Calif. Application Oct. 8, 1954, Serial No. 461,182. 11 Claims. (Cl. 251—215.)

6. In a device of the type described: a cylindrical housing for a valve and having a valve seat therein; a butterfly valve body adapted to bear against the seat when the valve is closed; said housing having a pair of diametrically opposed slots; an intermediate sleeve slidable longitudinally over the housing and covering the slots; a pair of pins carried by the sleeve and extending inwardly through the slots; said butterfy valve body being carried by and pivoted to the pins; cooperating means carried by the valve body and by the housing for opening the valve body when the sleeve is moved in one direction and for causing the valve body to bear against the seat when the sleeve is moved in the opposite direction; an outer sleeve rotatable on the intermediate sleeve and on the housing; said outer sleeve being held against longitudinal movement with respect to the housing and having a recess extending part way therethrough for receiving the intermediate sleeve; a sealing bellows disposed in the recess and having one end sealed to the end of the intermediate sleeve that faces into the recess, and having its other end sealed to the housing so as to enclose the slots.

2,706,568. AIR CONDITIONING SYSTEM. Harrison W. Marshall, Pleasantville, N. Y., assignor to Buensod-Stacey, Inc., New York, N. Y., a corporation of Delaware. Application Jan. 2, 1951, Serial No. 203,997. 2 Claims. (Cl. 257—3.)



1. In a multi-zone air conditioning system, the combination including central air conditioning means, fan means moving air through said central air conditioning means, high pressure cold air supply means receiving air from said central air conditioning means, cooling means in said cold air supply means, warm air supply means receiving air from said central air conditioning means, heating means in said warm air supply means, pressure reducing distributor enclosure means in each of several zones remotely located relative to said cold air and warm air supply means, temperature control means for controlling means in each air supply means maintaining predetermined temperature therein, cold air and warm air supply connections between said supply means and said pressure reducing distributor means, proportioning dampers in each of said supply connections at its respective distributor enclosure means, motor means connected with said dampers proportioning air supplied to the distributor enclosure, temperature responsive means adjacent said distributor means connected to its motor means proportioning the warm and cold air admitted to the distributor and thus fed to the zone, return air connections from at least some of said zones to said central air conditioning means returning air thereto outside air connections to said central air conditioning means, a separate fresh air supply fan connected with said cold air supply means through cooling means and after said central conditioning means and first mentioned cooling means in said cold air supply means furnishing a predetermined minimum quantity of outside air thereto, and means admitting a predetermined quantity of air from the cold air supply means, including fresh air from said separate fan, to each distributor enclosure means.

(The End)

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications $10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS WANTED

FACTORY MAJOR appliance representative—36—now employed in this capacity desires permanent connection with reliable concern. Three and one-half years factory level, five years distributor level. No objection to extensive traveling, but desire to maintain residence in Dallas, Texas. Contact DON BARTON, 10238 Brockbank Drive, Dallas, Texas.

RELIABLE, COMPETENT man desires to make change. Excellent references and wide acquaintances. Fourteen years' experience with leading wholesalers and manufacturers of refrigeration, air conditioning and heating equipment, application, sales, purchasing and management. Free to travel and relocate. Will consider factory representation. BOX A5276, Air Conditioning & Refrigeration News.

MANUFACTURER'S REPRESENTATIVE wants additional active lines. Contacting refrigeration parts wholesalers in Texas, Louisiana, Oklahoma and Arkansas. Reply BOX A5277, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

DO YOU want a future that is secure and loaded with opportunity? We have a position open, right now, that offers all this and more. Some jobber experience and a willingness to grow are the only requirements. Why not write or call today? LEE EQUIPMENT COMPANY, 4721 Joy Road, Detroit 4, Michigan.

SALESMEN — CALLING on locker plants: Selling our home freezers takes no more effort than selling saws, grinders, and general supplies. We ship direct to your accounts, the locker plant operators, who now lead all other outlets in sales. Generous commission structure—protected territories. TRI-STATE ELECTRIC MFG. CO., P. O. Box 836, Lima, Ohio.

PROJECT ENGINEER—A large, well-known manufacturer of heating and cooling equipment located near Chicago is expanding its engineering staff and facilities, and seeks a responsible project engineer qualified to design residential air conditioning equipment. Our organization knows of this advertisement and your response will be held in strictest confidence. In replying, please include a resume of your background, experience and salary requirements. Reply to BOX A5281, Air Conditioning & Refrigeration News.

FIELD SERVICE engineer, with 10 years' or more commercial refrigeration experience (preferably food store), is desired by manufacturer recognized as among the leaders in food store refrigeration equipment field. Must be free to travel and willing to move, if necessary, at our expense. Promotions create need for additional men in eastern and southeastern states. Position provides salary, expenses, car allowance, vacation with pay, insurance, hospitalization. Here's a real opportunity for a man 30 to 45 years. Replies held strictly confidential. Send recent photo with full particulars of experience to BOX A5283, Air Conditioning & Refrigeration News.

WANTED: DEVELOPMENT engineer, automotive air conditioning firm, located in Southwest. Expanding into other fields. Require young, energetic, forward-thinking development engineers with B.S. degree or equivalent, preferably with experience in design, load calculations, systems, surface design, etc. State age, marital status, education, experience, include photograph. Send letter to BOX A5286, Air Conditioning & Refrigeration News.

AIR CONDITIONING engineer college graduate with manufacturing or contractor experience in selecting equipment, design, and application to maintain technical contact with salesmen. Midwest manufacturer of compressors, package chillers, etc. to 60 tons. Salary open. Write letter giving full information as to education, experience, salary, etc. to BOX A5288, Air Conditioning & Refrigeration News.

MIDWEST MANUFACTURER has an opening for an application specialist to report to sales manager of cooling equipment. Should have actual experience in application of comfort cooling equipment. Some travel. Will assist distributors and dealers in establishing application practices. Assist in preparing installation manuals and conduct training programs. Our employees know of this ad. Send complete resume of education, experience, salary, etc. BOX A5289, Air Conditioning & Refrigeration News.

ASSISTANT MANAGER wanted—refrigeration fixtures, cases, coolers, etc. Must be able to take over sales covering state centrally located. Old firm. Furnish complete information, strictly confidential until deal made. Write BOX A5290, Air Conditioning & Refrigeration News.

EQUIPMENT WANTED

WE ARE interested in purchasing any Ajax Electric Iceman—new, used or parts. Contact BOX A5284, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

BRAND NEW ⅙ h.p. open-type units with two row condenser with thermotron type A Delco motor 115 V. 60 cycle. Complete in original crates Model O, each $42.50, 45 pcs. Also nationally-known 1 h.p. motors 220/440 V. 3 ph. 60 cycle 1725 r.p.m., heavy-duty 203 frame, $39.50 new in original crates. General replacement household controls type RJ dial plate & knob 25" capillary 15 degrees to 28 degrees, new in carton, $2.25 each. 9" industrial thermometers 40 minus to 110 F. mercury fill, new in cartons, each $3.95. Full satisfaction or refund. Prompt shipment. R. & R. EQUIPMENT COMPANY, 2724 Third Ave., Bronx 54, N. Y.

REFRIGERATION VALUES: Attention servicemen; send for our catalog of refrigeration parts; savings up to 50%. WALTER W. STARR REFRIGERATION SUPPLIES, 2833 Lincoln Ave., Chicago 13, Illinois.

MISCELLANEOUS

DOMESTIC CONTROLS and relays repaired equal to new at a small cost. New controls and relays also in stock. Write in for information. UNITED CONTROLS, 342 West 70th St., New York 23, N. Y.

For more information about products advertised on this page use Information Center, page 26.

Government Contracts

DEPARTMENT OF DEFENSE

United States Property and Fiscal Officer for Illinois, Box 549, Springfield, Illinois
Heating plant alterations at Illinois National Guard General Depot, Box 549, Springfield, Ill.—Job—IFB NG-11-115-56-1—Bid opening 26 Jul 55.

San Francisco District, Corps of Engineers, U. S. Army, 180 New Montgomery St., San Francisco, California
FURNACE, warm air, forced circulation, oil, 65,000 B.t.u.—91 ea.—IFB ENG-04-203-56-56 B—Bid opening 19 Jul 55.
FURNACE, warm air, forced circulation, oil, 40,000 B.t.u.—582 ea.—IFB ENG-04-203-56-56 B—Bid opening 18 Jul 55.

GENERAL SERVICES ADMINISTRATION

General Services Administration, Business Service Center, 7th & D Sts., S.W., Washington, D. C.
Following described items under IFB 4N-50711(1)R—Bid opening 27 Jul 55. FLAKE ICE MACHINE, 1 ea.—DIESEL GENERATOR UNIT, 1 ea.—DIESEL ENGINE UNIT, 1 ea.—AMMONIA REFRIGERANT SYSTEM, 1 ea.—SCOOP CAR 21 cu. ft. capacity, 3 ea.
VENTILATING FANS, U. S. Post Office, Court House, and Custom House, Newport News, Va.—Job—IFB GS-R3-B-3801.—Bid opening 5 Aug 55.

CONTRACTS AWARDED THROUGH JULY 8, 1955

Air Force Contracting Office, 3800th Air University Wing, Maxwell Air Force Base, Alabama
Installation of Air Conditioning System in Building No. 1, Maxwell Air Force Base, Ala., (IFB 01-600-55-79).—Job, $35,241.—Bell Construction Co., P.O. Box 1603, Montgomery, Alabama.

U. S. Navy Purchasing Office, 1206 S. Santee St., Los Angeles 15, Calironia
Refrigerators, electric, self contained, domestic type 1. N123-60530s-5074A.—(IFB-123-399-55).—278 ea., $34,736.—Frigidaire Sales Corp., 3251 Leonis Blvd., Los Angeles, California.

They Won't Be Home

The companies listed below have notified the NEWS that their plants and/or offices will shut down for vacations during the periods shown in the center columns.

The right hand column indicates whether the plant will continue regular shipments during the shutdown period, emergency shipments only, or will make no shipments at all. When orders must be directed to a special address, this information is given immediately below the company listing. When offices will operate with a skeleton staff during plant shutdowns, that fact is noted in the third column.

This list applies to vacation shutdowns beginning

Prior to August 7

Company	Shutdown Period: Plant	Shutdown Period: Office	Shipments From Plant
Arnett Company Limited	7/23-8/2	Skeleton	Emergency
Betz Corp.	8/1 -8/14	None	Stock items & Service Parts
Buffalo Forge Co.	8/1 -8/14	None	None
Carrier Corp.	8/1 -8/21	Skeleton	Regular
Essex Wire Corp., Cords Limited Div.	7/25-8/1	Skeleton	None
Friedrich Refrigerators, Inc. .	8/5 -8/22	8/5 -8/22	Regular
General Electric Co., Appliance Park	8/1 -8/7	8/1 -8/7	Regular
Hotpoint Co.	8/1 -8/15	8/1 -8/15	Regular
International Harvester Co. .	8/1 -8/15	8/1 -8/15	None
Redmond Co., Inc.	8/1 -8/8	None	Emergency
Savage Arms Corp., Refrigeration Div.	8/1 -8/15	Skeleton	Regular
Servel, Inc.	8/1 -8/13	8/1 -8/13	Regular
Sherer-Gillett Co.	8/1 -8/5	Skeleton	Emergency
Sweden Freezer Mfg. Co.	7/25-8/7	7/25-8/7	Emergency
Tyler Refrigeration Corp.	8/1 -8/6	8/1 -8/6	Regular
Vilter Mfg. Co.	8/1 -8/14	8/1 -8/14	Regular
Warren Co., Inc.	8/6 -8/14	Skeleton	None
Wilson Refrigeration, Inc. ...	8/1 -8/5	8/1 -8/5	Regular

'Fortune' Covers Tecumseh Story--

(Continued from Page 1)

about $23 million worth of business in 1954, and a few smaller companies also exclusively engaged in compressor production."

Competition Cited

Fortune also cites the increased activity of Kelvinator in this field. Noted too is the fact that Seeger Refrigerator, "dominated by Sears Roebuck and the manufacturer of Sears' Coldspot," is now offering compressors for freezers and air conditioners to the trade.

It is also pointed out that more and more firms entering the central home and office air conditioning fields are making their own compressors, as do Carrier, York, Trane, and other older companies in the business.

"This worries Tecumseh," the article says, "since the central air conditioning field is richer in potential than all cooling markets yet tapped. Dollar volume can be tremendous; 2-hp. compressors for such systems sell today in quantity for about $100, compared with less than $18 for ⅛-hp. compressors used to cool a small refrigerator, and $35 for a ½-hp. unit for a freezer or small-size conditioner."

'Central Character' Is Ray W. Herrick

"Central character" in the Tecumseh story is Ray W. Herrick, founder and chairman of the company. The *Fortune* report relates that Herrick once worked for Ford Motor Co. as a fine jig borer. Here, he first learned about the practice of watering down a job.

"On the third day, when Herrick was producing about 40 holes, a muscular fellow worker told him menacingly that '20 holes a day is the practice around here,'" the article says.

"Herrick is a slight man physically, so he cut his production rate back, but vowed that if he ever had a shop of his own, a man could work as hard as he wanted to and get paid for what he produced."

Absorbed Some Ford Philosophy

During his employment with Ford Motor, Herrick "became ingrained with the Ford philosophy of making things better and cheaper so as to get the price down," according to the article. "He also got his first production experience there."

In Tecumseh Products' early days, the company made a great variety of products. Herrick might never have gone into compressor manufacturing had it not been for the fact that three engineers, now all executive vice presidents, decided to enter the field with a compressor of their own design and got Herrick to make it for them.

The three are Frank M. Smith, Curtis M. Brown, and Jens K. Touborg. Oddly, *Fortune* points out, they didn't become formally associated with Herrick and Tecumseh until May 1 of this year.

For 22 years, Smith, Brown, and Touborg owned an independent company called Tresco (which got its name from Tecumseh Refrigeration Sales & Engineering Co.). This firm handled all of Tecumseh's product engineering and held sole rights to all of its refrigeration production.

It was Smith who first got Herrick interested in complete refrigeration compressors.

"Hearing in 1931 that a little Hillsdale alley machine shop was making parts for refrigerator compressors," the *Fortune* report says, "he tried to sell its proprietors, Herrick and Sage, the idea of making a complete compressor that he would engineer and market for a percentage of the net sales.

"None of them had any money to put into the development but they worked out a meager deal by which Smith went into the Hillsdale shop as a machinist at $12 a week to do any kind of work for Sage, and between times develop a prototype compressor," the article continues.

Smith Designed Simple Pump

"Within a year Smith had designed a simple pump. Herrick figured that he could make it for about half the price then current for such a device and still have plenty of profit left over for Hillsdale and Smith. They got their first sizable order, some 2,000 units, from Fedders through Smith's brother in 1932."

In 1933, Smith found that engineering and selling were becoming too much for one man. So Curtis Brown, a graduate refrigeration engineer from Purdue and factory manager at Gibson Refrigerator Co., came in as an equal partner with Smith on the latter's contract with Herrick.

"Smith and Brown's partnership, later known as Tresco, is probably one of the first businesses ever knowingly founded on a company that was heading for bankruptcy," *Fortune* observes.

Touborg Designs Tecumseh's First Hermetic

Jens Touborg joined Tresco as an equal partner in 1936 to design Tecumseh's first hermetic compressor, the type then being developed by the industry. (Brown had known Touborg, a crack refrigeration engineer, at Westinghouse and had later brought him to Gibson).

"Before World War II, Te-

(Concluded on next page)

Environmental Group Plans Publication

NEW YORK CITY—A new quarterly has been announced for furthering the interchange of information among users of environmental equipment.

Included in this group are laboratory personnel concerned with high and low temperature, altitude, humidity, salt spray, and similar environmental testing, as well as production personnel concerned with extreme low-temperature processing techniques such as are used in cold-treating metals, de-flashing molded rubber parts, etc.

Sponsored by the Environmental Equipment Institute (founded in 1953), the new quarterly will be directed by Dr. George D. Wilkinson, general manager of the institute. According to Dr. Wilkinson, the first issue will be in October.

The Tecumseh Story--

(Concluded from preceding page)

cumseh sold to the service-parts business, to small manufacturers of refrigerators, to little makers of low-volume refrigeration products such as water coolers. Touborg's hermetic, however, gave these companies just as satisfactory a product as those made by the majors, and some of these small outfits grew remarkably."

Business really boomed for Tecumseh, however, in the post-war period when there was a frantic scramble for compressors by refrigeration manufacturers who had torn out their own facilities, and by important companies entering the field for the first time, the *Fortune* article relates.

Orders Ahead of Capacity

Although orders in 1945 and 1946 were way beyond Tecumseh's capacity, Herrick never turned one down, according to *Fortune*.

"He reasoned smartly," it is explained, "that customers couldn't possibly get enough other materials to fill their schedules, and that Tecumseh could probably deliver enough compressors to equip as many refrigerators as his customers could actually produce. Tecumseh earned a priceless reputation for always delivering requirements on time."

Plowing back earnings, Herrick more than quadrupled plant from 1946 through 1950. By that time, Tecumseh was turning out compressors at the rate of 2,500,000 a year. Sales totaled $72 million.

Well-Grounded Expansion

Pointing out that Herrick has always been right about expanding Tecumseh, *Fortune* says:

"When he say that the domestic refrigerator business threatened to reach a saturation point and taper off by 1951, he pushed up Tecumseh's capacity to take advantage of the rising market in freezers.

"By the time Tecumseh had caught up with the freezer market, the boom in room air conditioners developed and boosted business still more.

"There has not been a year since World War II when Tecumseh failed to increase its penetration of the combined refrigerator, home freezer, and room air conditioning markets."

Outlining the basic reasons for Tecumseh's "remarkable growth," the magazine says one of them is that "no nationally-known refrigeration company or small group of them dominates any segment of the field.

No Industry Domination

"Frigidaire, for years the industry's leader in domestic refrigerators, presumably commands somewhat less than 15% of the market, which last year totaled 3,400,000.

"G-E is certainly second. Third and fourth places are scrambled over by six or seven companies. . . . The room air conditioning and freezer markets are also fragmented."

Discussing low-cost factors in Tecumseh's operation, the magazine says one of these is broad interchangeability of compressor parts.

Herrick's insistence on incentive pay for plant labor is listed as another and major low-cost factor.

"The Herrick doctrine," *Fortune* says, "is dramatically visible in his plants at times of shift changes.

Stay on the Job

"Unlike other establishments where the whole plant may put down tools a half hour early because the day's 'standards' have been met, with employes merely killing time waiting for the whistle to blow, at Tecumseh everyman stays on the job to the last second.

"The men of the new shift come in early and line up against the walls as close to their tools as possible, then race to their jobs at the signal."

The article presents some interesting sidelights on Herrick's personal characteristics. Among other things, it notes that "like most explosive people he is sensitive and softhearted.

"His charities in the town of Tecumseh are numerous and diverse. He has helped many a wayward boy, many a struggling family. The Herrick Memorial hospital, completely modern, received most of its money (some $400,000) from him. When the local country club tottered, Herrick, who is not a golfer, had his company take it over and operate it for the whole community.

"Some Tecumseh citizens interpret these gifts and gestures as an effort by Herrick to control the town, and this hurts him deeply. But most Tecumseh folk seem to like and respect him."

H. L. Hinchliff

J. A. Rishel

Amana Shifts--

(Concluded from Page 1, Col. 4)

ting up its post-World War II distribution plans. Amana had decided to begin manufacturing food freezers for the home after the war ended. Prior to that time Amana had made only commercial refrigeration and air conditioning equipment.

For the seven years prior to 1932, Hinchliff directed the merchandising activities of Middlewest Utilities Co.

While with Middlewest, Hinchliff conceived and executed the modernization program for the company's 2,000 appliance sales rooms. He also assumed an active part in the development and promotion of the Off-Peak Water Heater in this country.

Following the dissolution of the Middlewest Utilities System, Hinchliff occupied executive sales positions with Easy Washing Machine Co. and Carrier Corp.

Rishel is a graduate of Brown university. During World War II, he served as assistant chairman of the War Department's Bomb Fin Integration Committee.

Bally Names Briggs

BALLY, Pa.—Appointment of A. F. Briggs Co., Portland, Me., as the exclusive sales representative of Bally Case & Cooler Co. in the Portland trading area and southern Maine has been announced by Leon Prince, Bally sales manager.

For more information about products advertised on this page use Information Center, page 26.